FCC TEST REPORT
for
Shanghai Nine Eagles Electronic Technology Co., Ltd.

Transmitter
Model No.: NE-TXOS219, NE-TXOS223, NE-TXOS225, NE-TXOS226, NE-TXOS227, NE-TXOS228, NE-TXO8203, NE-TXO8205, NE-TXO8207, NE-TXO8209, NE-TXO8211, NE-TXO8208, NE-TXO8206, NE-TXO8218

Prepared for	:	Shanghai Nine Eagles Electronic Technology Co., Ltd.
Address	:	Room 1104, Huaxiang Building, No. 80 Moling Road, Shanghai, 200070, China

Prepared By	:	Shenzhen Anbotek Compliance Laboratory Limited
Address	:	1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China Tel: (86) 755-26066544 Fax: (86) 755-26014772

Report Number	:	R011605790I
Date of Test	:	Sept. 01~ 31, 2016
Date of Report	:	Oct. 27, 2016

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TEST REPORT

Applicant	:	Shanghai Nine Eagles Electronic Technology Co., Ltd.
Manufacturer	:	Shanghai Nine Eagles Electronic Technology Co., Ltd.
EUT	:	Transmitter
Model No.	:	NE-TXOS219, NE-TXOS223, NE-TXOS225, NE-TXOS226, NE-TXOS227, NE-TXOS228, NE-TXO8203, NE-TXO8205, NE-TXO8207, NE-TXO8209, NE-TXO8211, NE-TXO8208, NE-TXO8206, NE-TXO8218
Serial No.	:	N.A.
Trade Mark	:	N.A.
Rating	:	DC 11.1V, 1A

Measurement Procedure Used:
FCC Part15 Subpart E 2016, Paragraph 15.407

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart E requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Sept. 01~ 31, 2016

Prepared by : (Tested Engineer / Baron Wen)

Reviewer : (Project Manager / Amy Ding)

Approved & Authorized Signer : (Manager / Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT : Transmitter

Model Number : NE-TXOS219, NE-TXOS223, NE-TXOS225, NE-TXOS226, NE-TXOS227, NE-TXOS228, NE-TXO8203, NE-TXO8205, NE-TXO8207, NE-TXO8209, NE-TXO8211, NE-TXO8208, NE-TXO8206, NE-TXO8218
(Note: All samples are the same except the model number and colour, so we prepare "NE-TXOS219" for test only.)

Test Power Supply : DC 11.1V, from the battery

Frequency :

Types of module	Operating Frequency
FHSS	2403-2479MHz
WiFi 5G (802.11a/ n(HT20)	5745-5825MHz
WiFi 5G (802.11n(HT40)	5755-5795MHz

Antenna Spec. : 2.4G:0.5dBi
WIFI 5G ANT 0 and ANT 1:5.3dBi, Directional gain:8.31dBi

Modulation : FHSS 2.4G: GFSK
WiFi: OFDM

Applicant : Shanghai Nine Eagles Electronic Technology Co., Ltd.
Address : Room 1104, Huaxiang Building, No. 80 Moling Road, Shanghai, 200070, China

Manufacturer/ Factory : Shanghai Nine Eagles Electronic Technology Co., Ltd.
Address : Room 1104, Huaxiang Building, No. 80 Moling Road, Shanghai, 200070, China

Date of receipt : Sept. 01, 2016

Date of Test : Sept. 01~ 31, 2016

Remark : This report is for 5G Module only.

1.2. Auxiliary Equipment Used during Test

N/A

1.3. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 752021
Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 752021, July 06, 2016.

IC-Registration No.: 8058A-1
Shenzhen Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A, June 13, 2016.

Test Location
All Emissions tests were performed at
Shenzhen Anbotek Compliance Laboratory Limited. at 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China

1.4. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 4.1 dB (Horizontal) Ur = 4.3 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4dB

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10: 2013 and FCC Part 15, Paragraph 15.247.

2.1. Summary of Test Results

The EUT has been tested according to the following specifications:

Standard	Test Type	Result
FCC Part 15, Paragraph 15.207 & 15.407	Conducted Emission	PASS
FCC Part 15, Paragraph 15.407(b)(1)(4)(5)(7)	Undesireable Emission Restricted Band	PASS
FCC Part 15, Paragraph 15.407(a)(1)	26dB Bandwidth	PASS
FCC Part 15, Paragraph 15.407(a)(1)(2)(3)	Maximum Conducted Output Power	PASS
FCC Part 15, Paragraph 15.407(a)(1)(2)(3)	Peak Power Spectrual Density	PASS
FCC Part 15, Paragraph 15.203	Antenna Requirement	PASS

2.2. Description of Test Modes

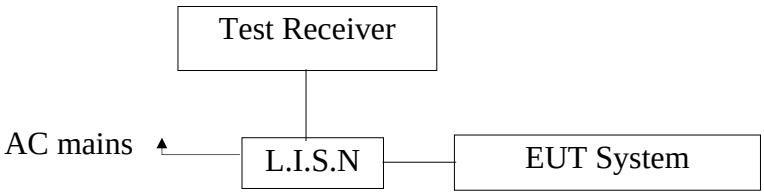
The EUT has been tested under operating condition.
Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Mode	Test channel
IEEE802.11a	5745MHz
	5785MHz
	5825MHz
IEEE802.11n(HT20)	5745MHz
	5785MHz
	5825MHz
IEEE802.11n(HT40)	5755MHz
	5815MHz

3. Conducted Emission Test

3.1. Block Diagram of Test Setup

3.1.1. Block diagram of connection between the EUT and simulators



3.2. Power Line Conducted Emission Measurement Limits (15.207)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.4. Operating Condition of EUT

3.4.1. Setup the EUT and simulator as shown as Section 3.1.

3.4.2. Turn on the power of all equipment.

3.4.3. Let the EUT work in test mode (Charging and On) and measure it.

3.5. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10-2013 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

The test results are reported on Section 3.6.

3.6. Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Two-Line V-network	Rohde & Schwarz	ENV216	100055	Apr. 16, 2016	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 16, 2016	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr. 16, 2016	1 Year

3.7. Power Line Conducted Emission Measurement Results

PASS.

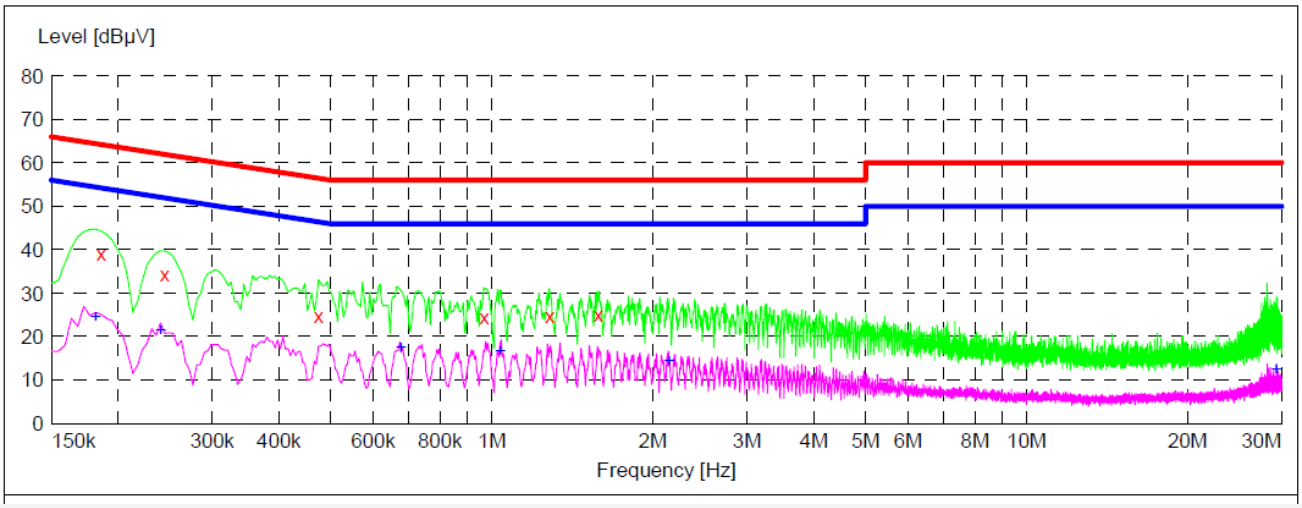
The frequency range from 150KHz to 30 MHz is investigated.

The EUT was tested on (Charging and On) Mode is attached in the following pages.

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	Charging and On
Test Specification:	AC 120V, 60Hz for adapter
Comment:	Live Line
	Tem.:25℃ Hum.:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



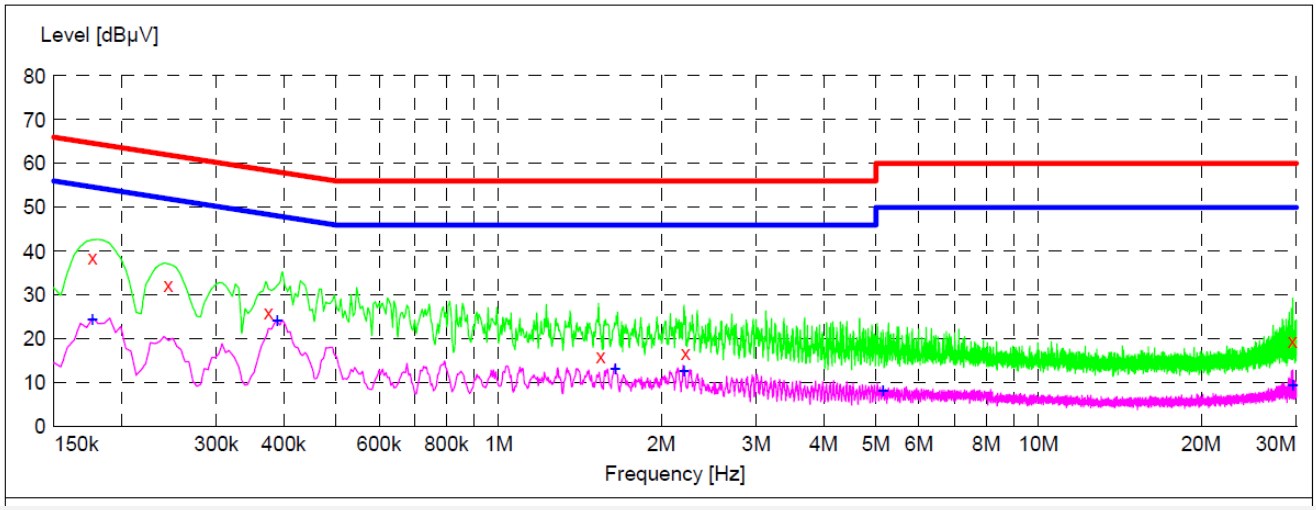
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.186000	39.20	20.1	64	25.0	QP	L1	GND
0.244500	34.30	20.1	62	27.6	QP	L1	GND
0.474000	24.80	20.1	56	31.6	QP	L1	GND
0.969000	24.60	20.2	56	31.4	QP	L1	GND
1.283500	24.70	20.2	56	31.3	QP	L1	GND
1.580500	25.10	20.3	56	30.9	QP	L1	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.181500	24.50	20.1	54	29.9	AV	L1	GND
0.240000	21.40	20.1	52	30.7	AV	L1	GND
0.676500	17.50	20.1	46	28.5	AV	L1	GND
1.036000	16.80	20.2	46	29.2	AV	L1	GND
2.147500	14.30	20.3	46	31.7	AV	L1	GND
29.305000	12.40	20.9	50	37.6	AV	L1	GND

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	Charging and On
Test Specification:	AC 120V, 60Hz for adapter
Comment:	Neutral Line
	Tem.:25℃ Hum.:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



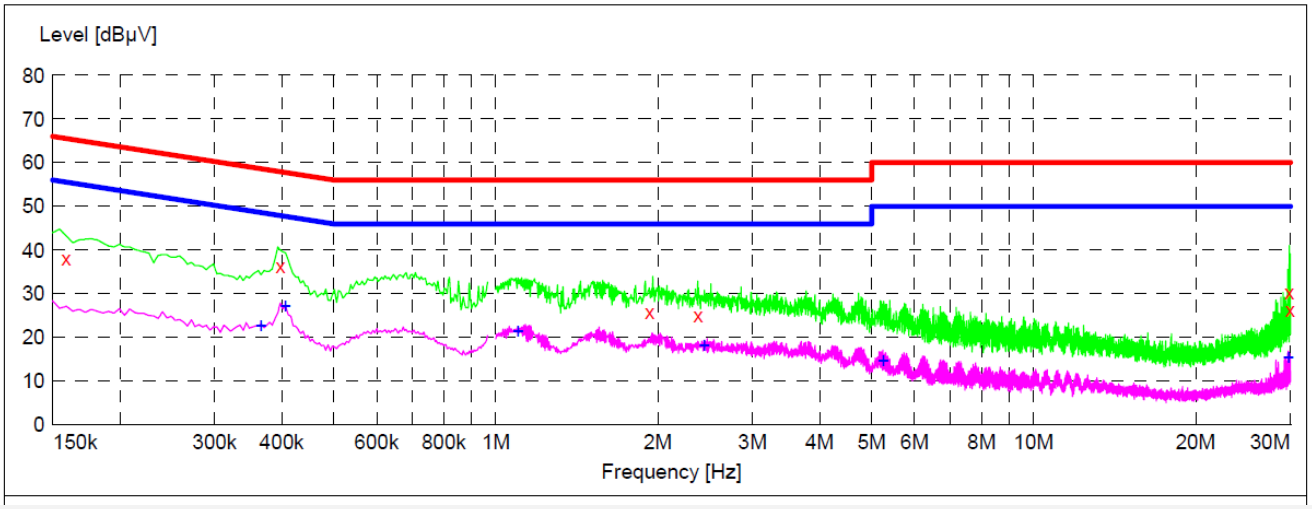
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.177000	38.50	20.1	65	26.1	QP	N	GND
0.244500	32.40	20.1	62	29.5	QP	N	GND
0.375000	26.00	20.1	58	32.4	QP	N	GND
1.544500	16.00	20.3	56	40.0	QP	N	GND
2.219500	16.90	20.3	56	39.1	QP	N	GND
29.561500	19.60	20.9	60	40.4	QP	N	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.177000	24.50	20.1	55	30.1	AV	N	GND
0.388500	24.40	20.1	48	23.7	AV	N	GND
1.643500	13.20	20.3	46	32.8	AV	N	GND
2.206000	12.80	20.3	46	33.2	AV	N	GND
5.153500	8.40	20.5	50	41.6	AV	N	GND
29.561500	9.70	20.9	50	40.3	AV	N	GND

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	Charging and On
Test Specification:	AC 240V, 60Hz for adapter
Comment:	Live Line
	Tem.:25℃ Hum.:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



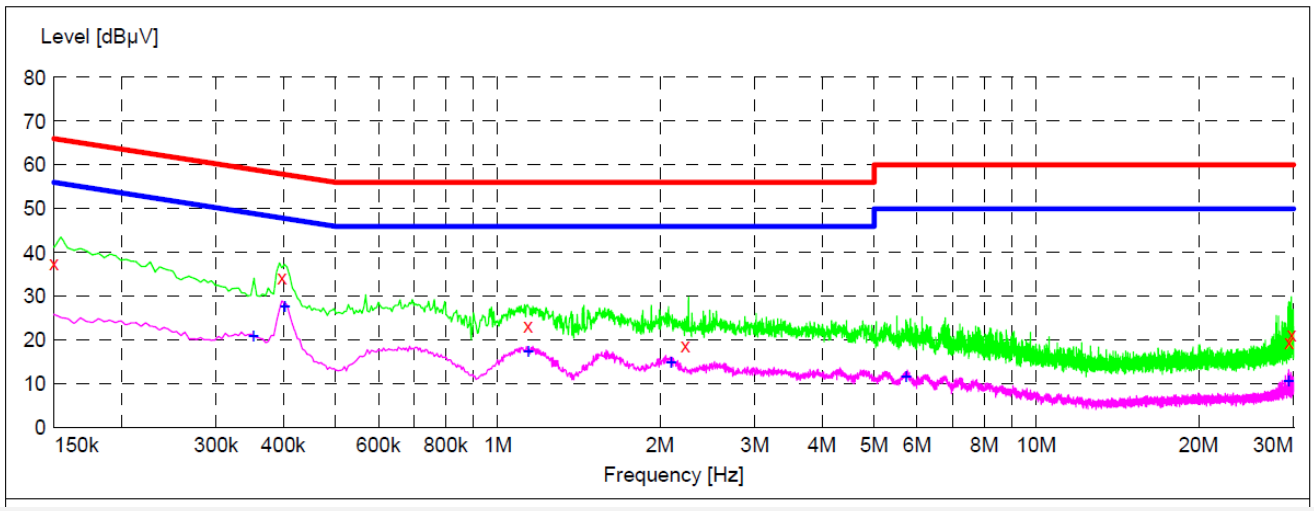
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	38.10	20.1	66	27.4	QP	L1	GND
0.397500	36.40	20.1	58	21.5	QP	L1	GND
1.931500	25.80	20.3	56	30.2	QP	L1	GND
2.377000	25.10	20.3	56	30.9	QP	L1	GND
29.876500	30.30	20.9	60	29.7	QP	L1	GND
29.939500	26.40	20.9	60	33.6	QP	L1	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.366000	22.80	20.1	49	25.8	AV	L1	GND
0.406500	27.30	20.1	48	20.4	AV	L1	GND
1.099000	21.70	20.2	46	24.3	AV	L1	GND
2.440000	18.30	20.3	46	27.7	AV	L1	GND
5.252500	14.90	20.5	50	35.1	AV	L1	GND
29.750500	15.60	20.9	50	34.4	AV	L1	GND

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	Charging and On
Test Specification:	AC 240V, 60Hz for adapter
Comment:	Neutral Line
	Tem.:25℃ Hum.:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	37.70	20.1	66	28.3	QP	N	GND
0.397500	34.40	20.1	58	23.5	QP	N	GND
1.139500	23.30	20.2	56	32.7	QP	N	GND
2.228500	18.80	20.3	56	37.2	QP	N	GND
29.435500	19.50	20.9	60	40.5	QP	N	GND
29.755000	21.40	20.9	60	38.6	QP	N	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.352500	21.10	20.1	49	27.8	AV	N	GND
0.402000	27.90	20.1	48	19.9	AV	N	GND
1.139500	17.70	20.2	46	28.3	AV	N	GND
2.098000	15.10	20.3	46	30.9	AV	N	GND
5.725000	11.80	20.5	50	38.2	AV	N	GND
29.368000	10.90	20.9	50	39.1	AV	N	GND

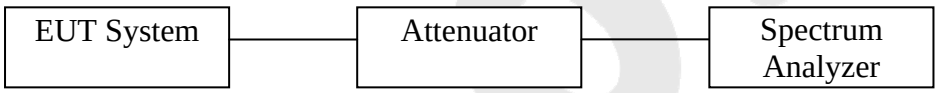
4.Bandwidth

4.1. Test Limit

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

4.2. Test Setup



4.3. Test Procedure

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

3. Set the spectrum analyzer as:
26 dB &99%bandwidth
RBW = approximately 1% of the emission bandwidth;
Set the VBW＞RBW;
Detector= Peak
Trace mode= Max hold.
Sweep- auto couple.
6 dB bandwidth
RBW = 100kHz;
Set the video bandwidth (VBW) ≥ 3 RBW ;
Detector= Peak
Trace mode= Max hold.
Sweep- auto couple.

4. Measure the maximum width of the emission that is 26dB /6dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer.
5. Repeat until all the rest channels are investigated.

3.4. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 16, 2016	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 16, 2016	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 16, 2016	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 19, 2016	1 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 19, 2016	1 Year
6.	Pre-amplifier	SONOMA	310N	186860	Apr. 16, 2016	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
8	Power Sensor	DAER	RPR3006W	15I00041SN046	Jun 30, 2016	1 Year
9	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Jun 30, 2016	1 Year
10	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Jun 30, 2016	1 Year
11	Signal Generator	Agilent	E4421B	MY41000743	Jun 30, 2016	1 Year
12	DC Power supply	IV	IV-8080	YQSB0096	Jun 30, 2016	1 Year
13	TEMP&HUMI PROGRAMMABLE CHAMBER	Bell Group	BE-THK-150M8	SE-0137	Mar 16, 2016	1 Year
14	Spectrum Analysis	Rohde & Schwarz	FSV40	132.1.3008K39 -100965	Mar 17, 2016	1 Year
15	Pre-amplifier	Agilent	8449B	3008A00252	Mar 17, 2016	1 Year
16	Horn Antenna	SCHWARZBECK	BBHA9170	9170-068	Mar 17, 2016	1 Year
17	Power sensor	RadiPower	RPR3006W	SET85325	Mar 17, 2016	1 Year
18	Power meter	R&S	NRVS	100696	Mar 17, 2016	1 Year

3.5. Test Results

Pass.
Please refer to the following data.

Bandwidth:

ANT 0:
Test Mode: IEEE 802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	16.41	21.56	16.837
Mid	5785	16.41	21.47	16.798
High	5825	16.37	21.50	16.816

ANT 0:
Test Mode: IEEE 802.11n(HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	17.60	21.74	17.975
Mid	5785	17.58	21.69	17.923
High	5825	17.60	21.84	17.919

ANT 0:
Test Mode: IEEE 802.11n(HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	35.56	40.09	36.361
High	5795	35.86	39.92	36.336

ANT 1:
Test Mode: IEEE 802.11a

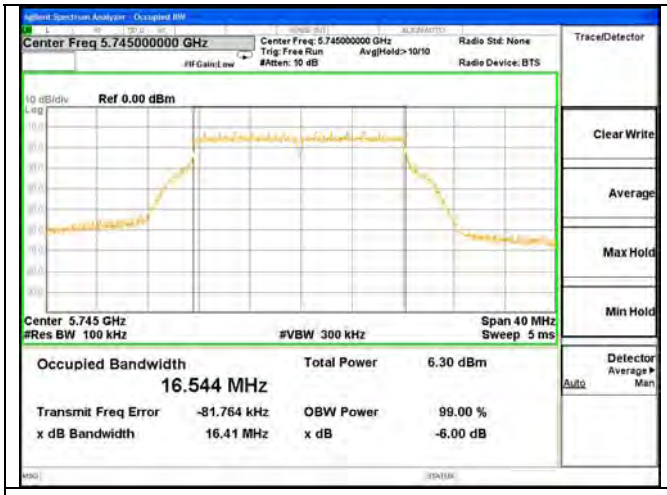
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	16.40	21.42	16.869
Mid	5785	16.36	21.29	16.802
High	5825	16.37	21.46	16.830

ANT 1:
Test Mode: IEEE 802.11n(HT20)

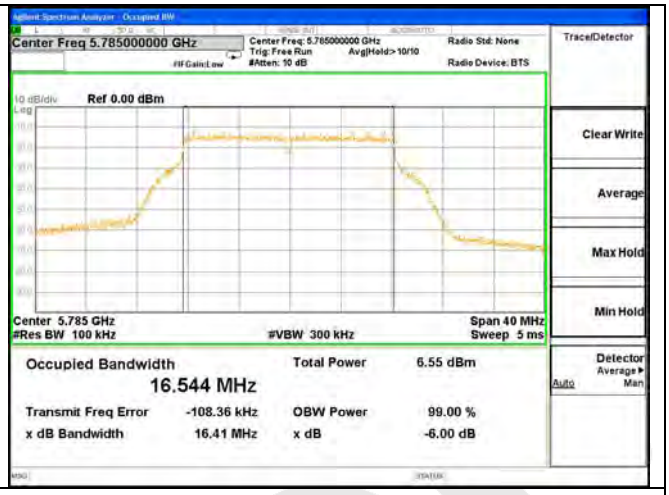
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	17.65	21.67	17.898
Mid	5785	17.59	21.65	17.893
High	5825	17.58	21.66	17.935

ANT 1:
Test Mode: IEEE 802.11n(HT40)

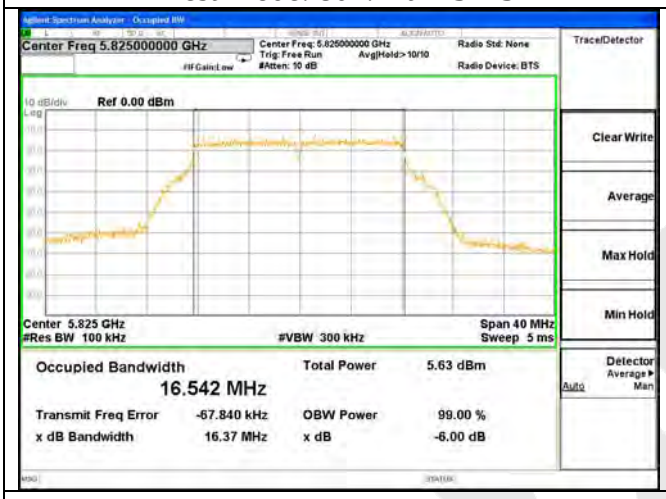
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	35.54	40.13	36.313
High	5795	35.59	40.05	36.334



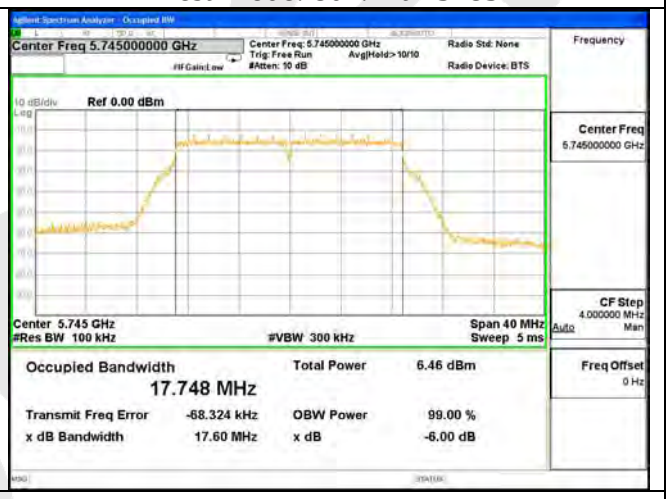
ANT 0---6dB Bandwidth
Test Mode: 802.11a---5745



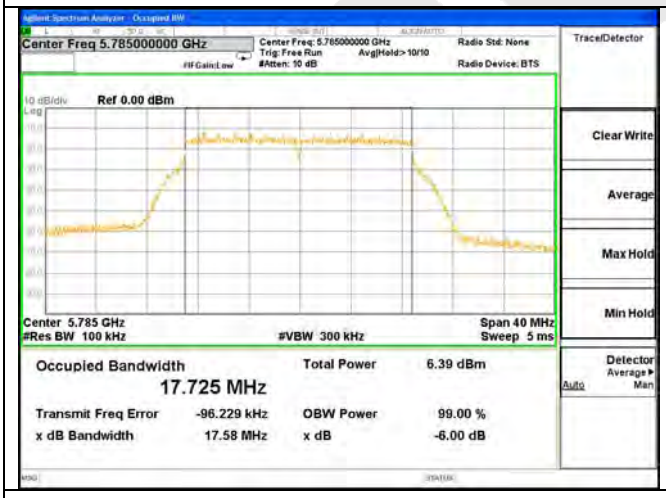
ANT 0---6dB Bandwidth
Test Mode: 802.11a--5785



ANT 0---6dB Bandwidth
Test Mode: 802.11a---5825



ANT 0---6dB Bandwidth
Test Mode: 802.11n(HT20)---5745



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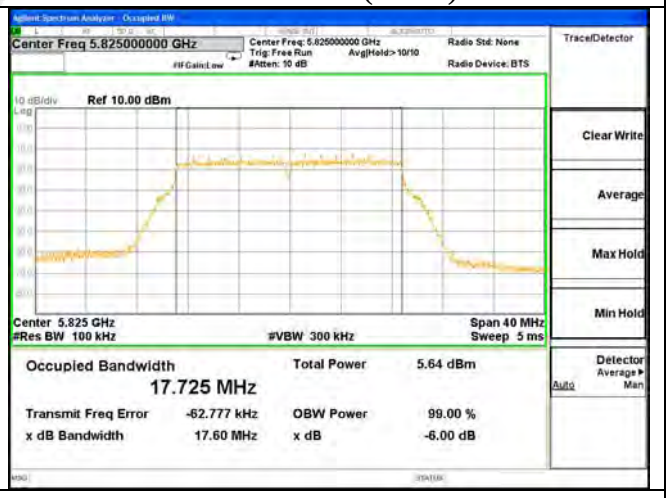
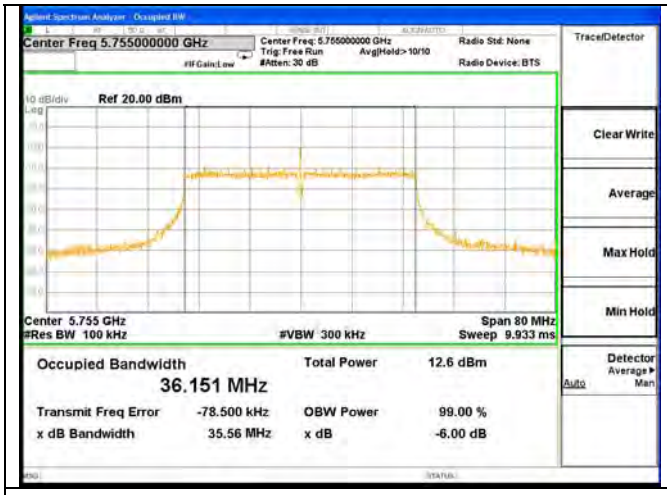
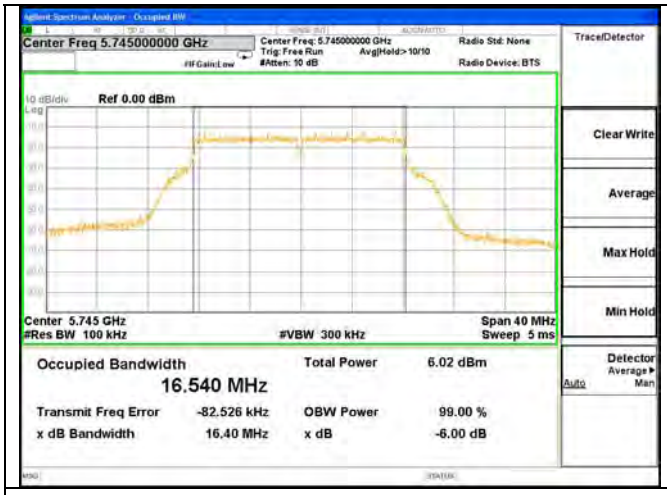
Test Mode: 802.11n(HT20)--5785

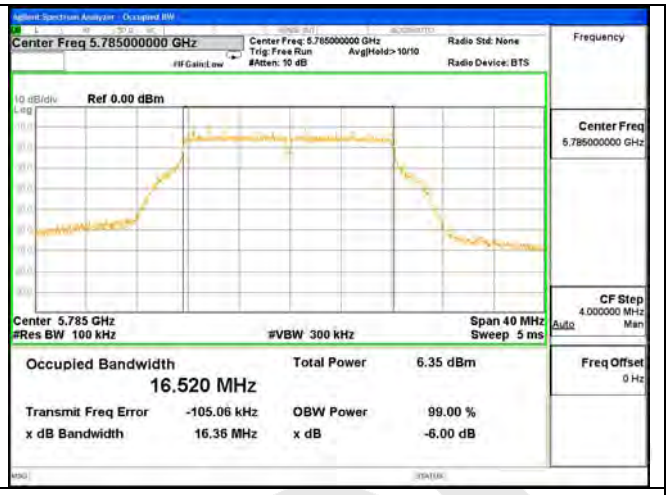


ANT 0---6dB Bandwidth
Test Mode: 802.11n(HT20)---5825

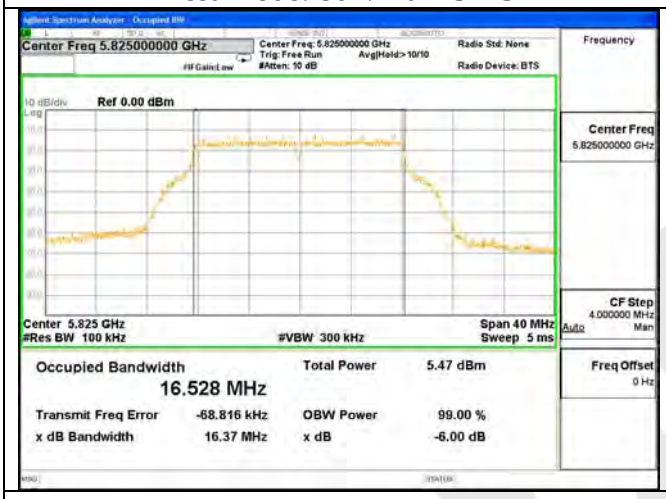
	
ANT 0---6dB Bandwidth Test Mode: 802.11n(HT40)--5755	ANT 0---6dB Bandwidth Test Mode: 802.11n(HT40)---5795



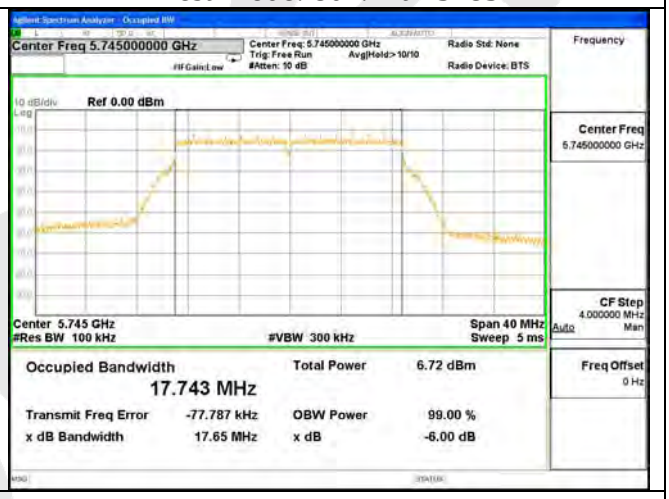
ANT 1---6dB Bandwidth
Test Mode: 802.11a---5745



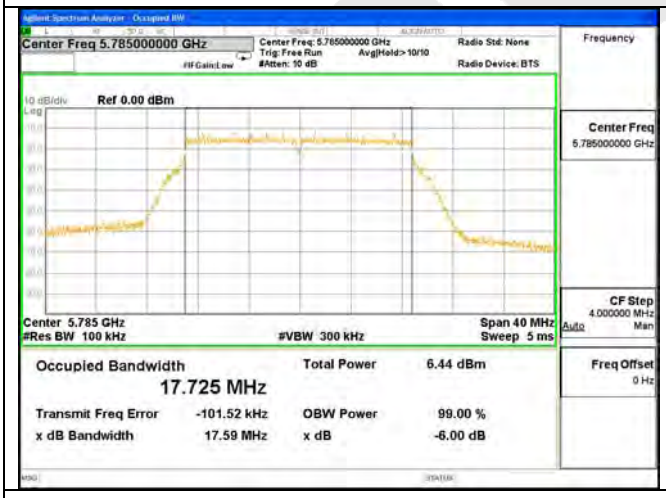
ANT 1---6dB Bandwidth
Test Mode: 802.11a--5785



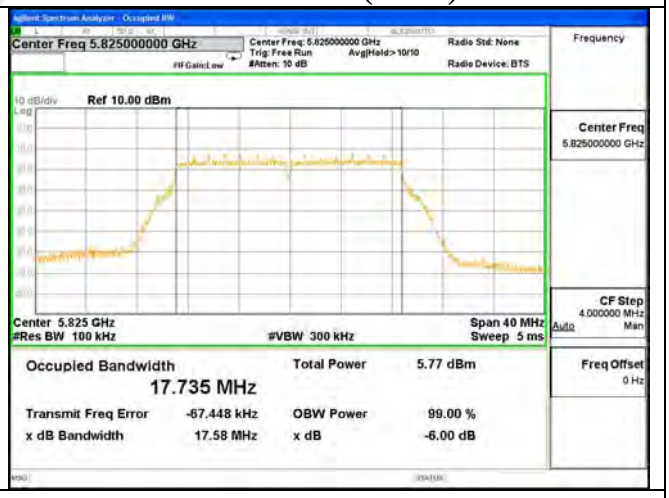
ANT 1---6dB Bandwidth
Test Mode: 802.11a---5825



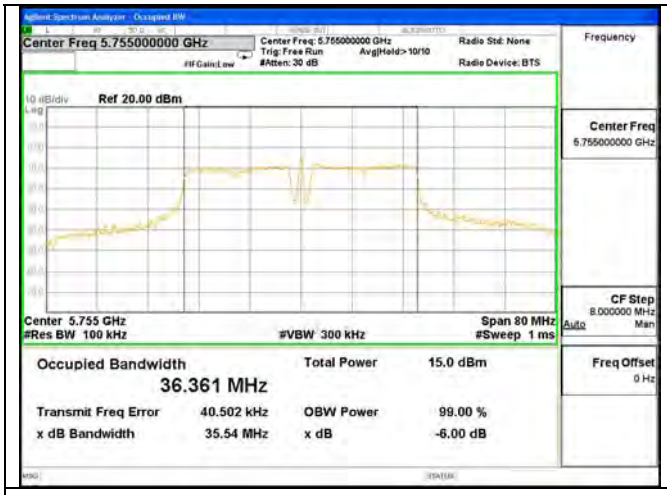
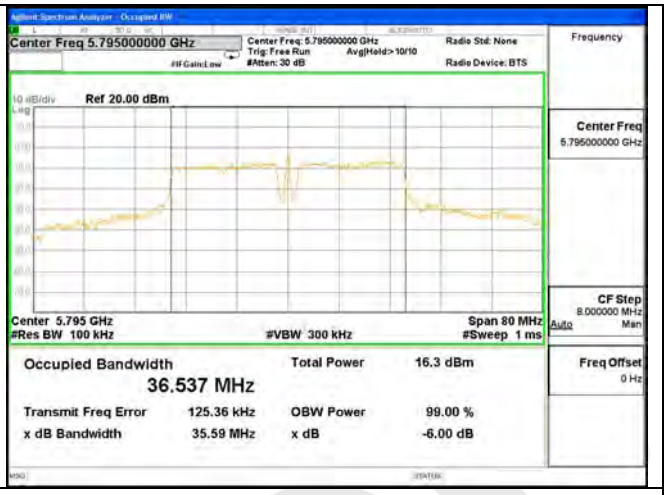
ANT 1---6dB Bandwidth
Test Mode: 802.11n(HT20)---5745

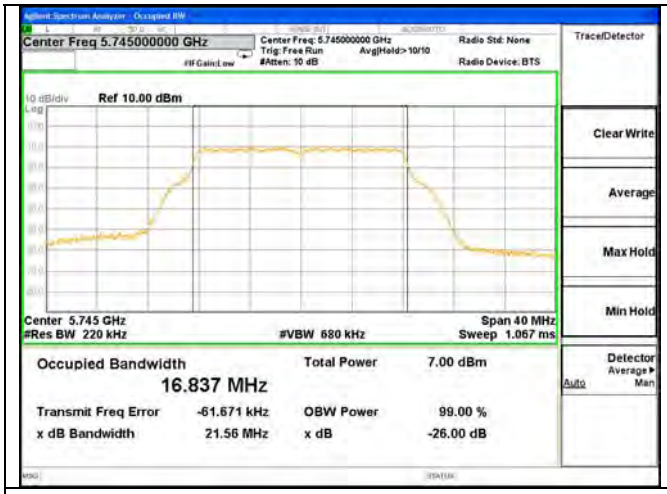


ANT 1---6dB Bandwidth
Test Mode: 802.11n(HT20)--5785

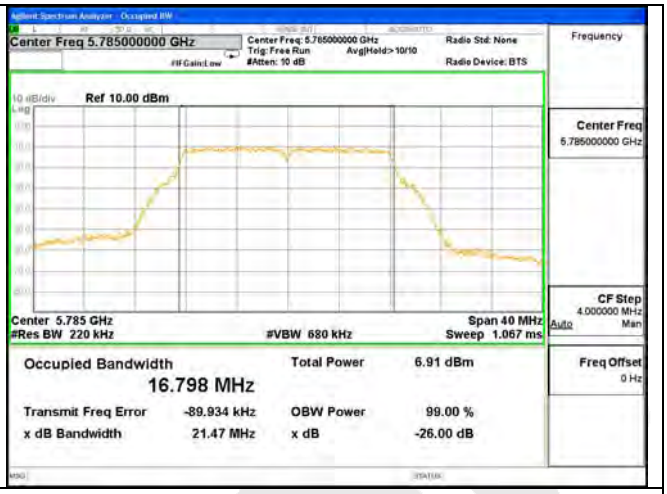


ANT 1---6dB Bandwidth
Test Mode: 802.11n(HT20)---5825

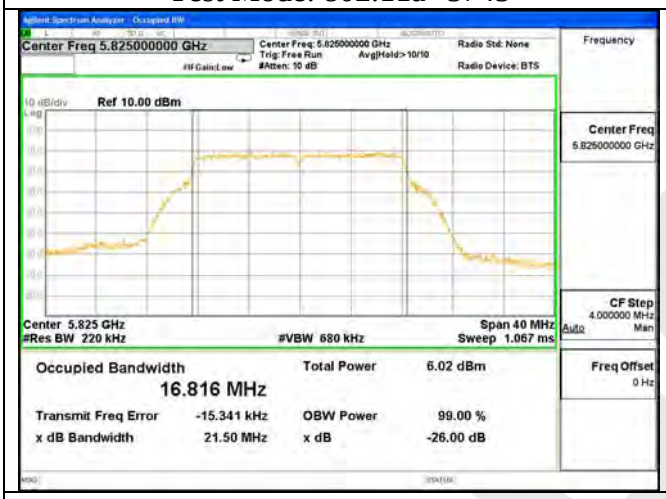
	
ANT 1---6dB Bandwidth Test Mode: 802.11n(HT40)--5755	ANT 1---6dB Bandwidth Test Mode: 802.11n(HT40)---5795



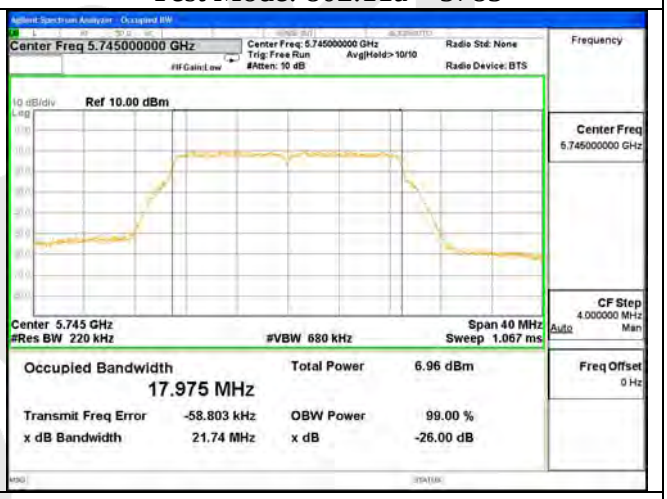
ANT 0---26dB & 99% Bandwidth
Test Mode: 802.11a--5745



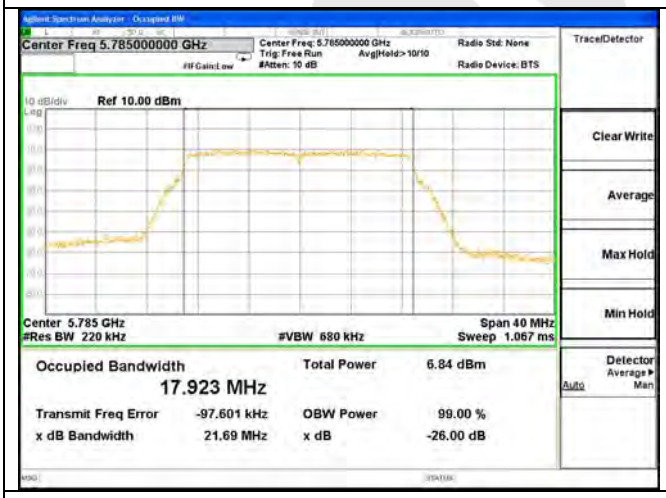
ANT 0---26dB & 99% Bandwidth
Test Mode: 802.11a---5785



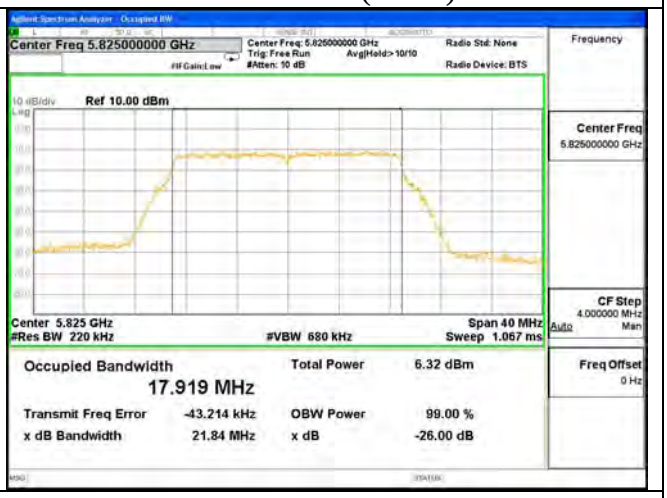
ANT 0---26dB & 99% Bandwidth
Test Mode: 802.11a--5825



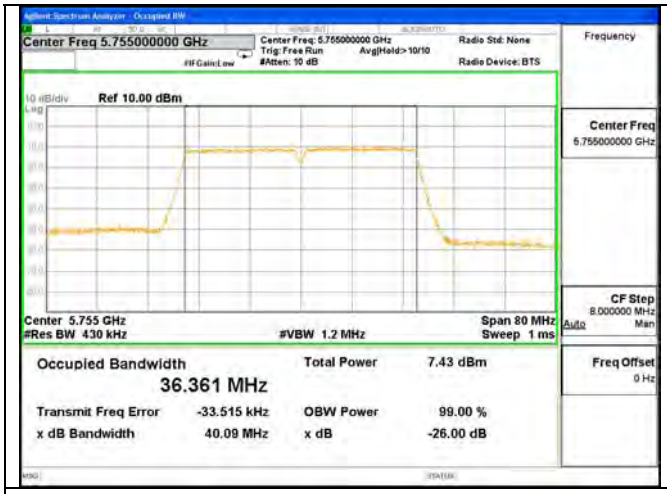
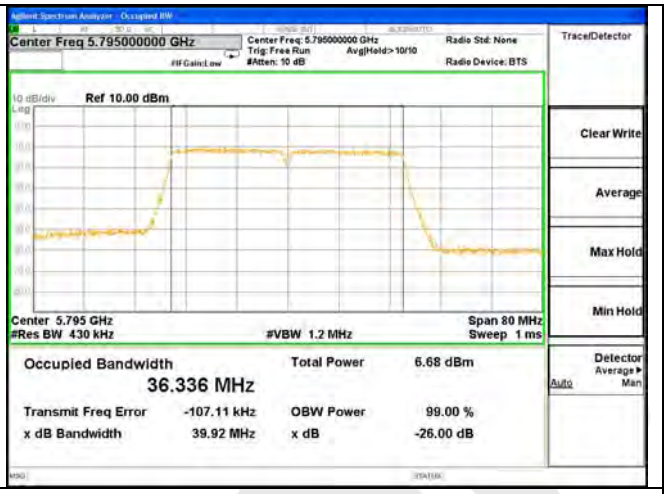
ANT 0---26dB & 99% Bandwidth
Test Mode: 802.11n(HT20)---5745

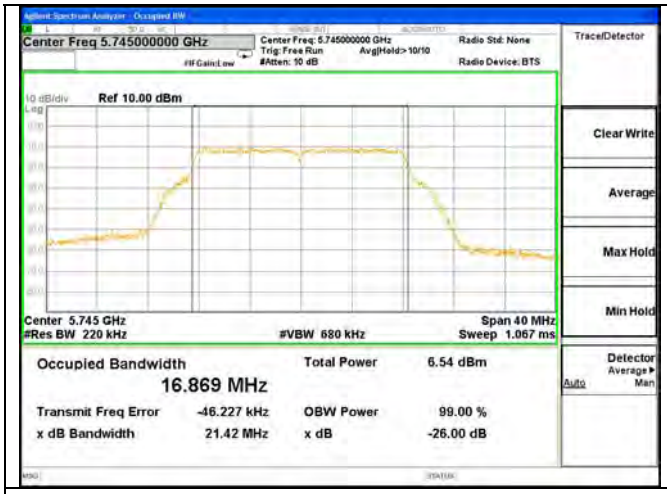


ANT 0---26dB & 99% Bandwidth
Test Mode: 802.11n(HT20)--5785

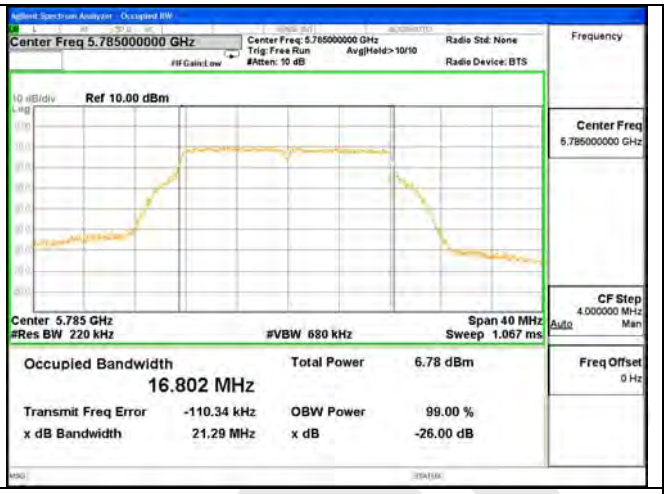


ANT 0---26dB & 99% Bandwidth
Test Mode: 802.11n(HT20)---5825

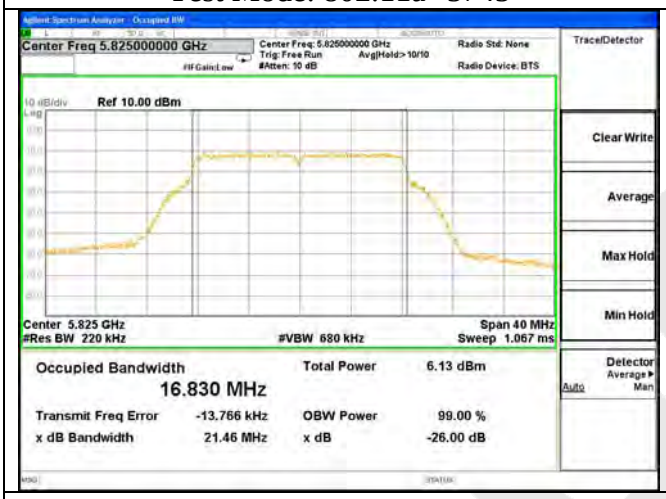
	
ANT 0---26dB & 99% Bandwidth Test Mode: 802.11n(HT40)--5755	ANT 0---26dB & 99% Bandwidth Test Mode: 802.11n(HT40)---5795



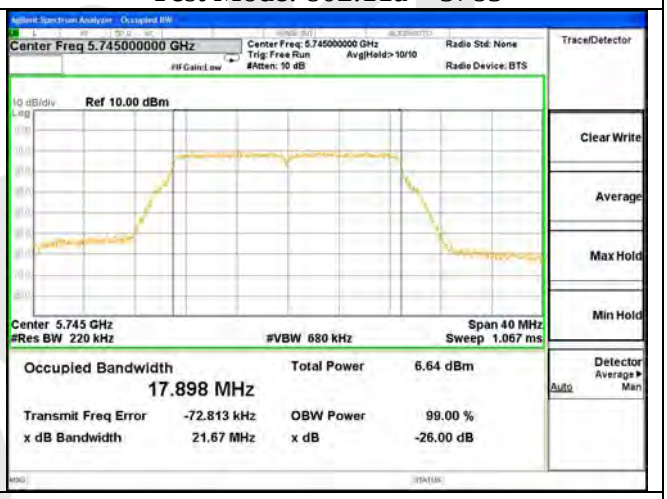
ANT 1---26dB & 99% Bandwidth
Test Mode: 802.11a--5745



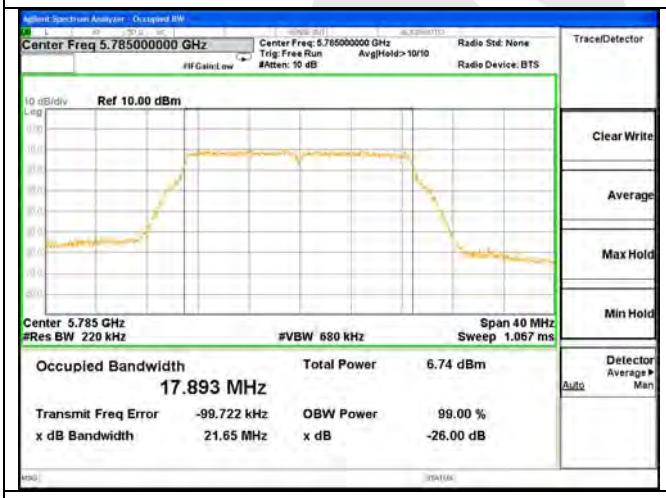
ANT 1---26dB & 99% Bandwidth
Test Mode: 802.11a---5785



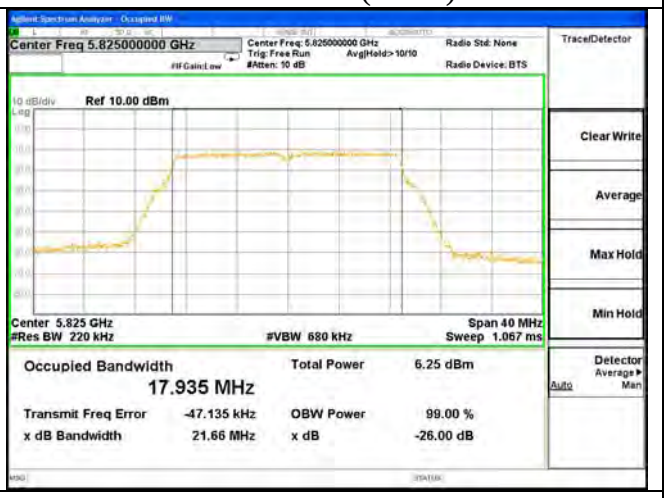
ANT 1---26dB & 99% Bandwidth
Test Mode: 802.11a--5825



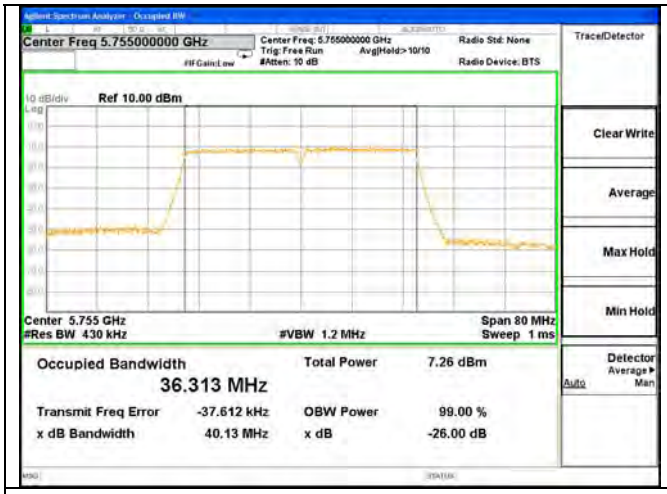
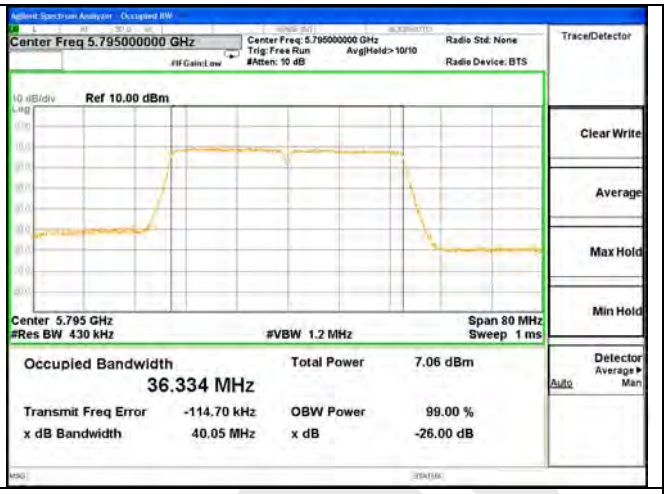
ANT 1---26dB & 99% Bandwidth
Test Mode: 802.11n(HT20)---5745



ANT 1---26dB & 99% Bandwidth
Test Mode: 802.11n(HT20)--5785



ANT 1---26dB & 99% Bandwidth
Test Mode: 802.11n(HT20)---5825

	
ANT 1---26dB & 99% Bandwidth Test Mode: 802.11n(HT40)--5755	ANT 1---26dB & 99% Bandwidth Test Mode: 802.11n(HT40)---5795

5. Maximum Conducted Output Power Test

5.1. Test Limit

1) For the band 5.15-5.25 GHz.
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

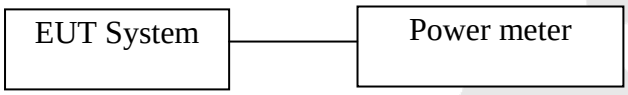
(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional

gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

5.2. Test Setup



5.4. Test Equipment

Same as clause 4.4.

5.5. Test Results

Pass.
Please refer to the following data.

ANT 0:
Test Mode: IEEE 802.11a

Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Result
Low	5745	5.44	27.69	Pass
Mid	5785	5.21	27.69	Pass
High	5825	5.17	27.69	Pass

ANT 0:
Test Mode: IEEE 802.11n(HT20)

Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Result
Low	5745	5.77	27.69	Pass
Mid	5785	5.50	27.69	Pass
High	5825	5.94	27.69	Pass

ANT 0:
Test Mode: IEEE 802.11n(HT40)

Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Result
Low	5755	5.95	27.69	Pass
High	5795	5.87	27.69	Pass

ANT 1:
Test Mode: IEEE 802.11a

Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Result
Low	5745	5.68	27.69	Pass
Mid	5785	5.39	27.69	Pass
High	5825	5.74	27.69	Pass

ANT 1:

Test Mode: IEEE 802.11n(HT20)

Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Result
Low	5745	5.78	27.69	Pass
Mid	5785	5.15	27.69	Pass
High	5825	5.56	27.69	Pass

ANT 1:
Test Mode: IEEE 802.11n(HT40)

Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Result
Low	5755	5.89	27.69	Pass
High	5795	5.95	27.69	Pass

Channel	**Channel Frequency (MHz)**	**ANT 0 Output Power (dBm)**	**ANT 1 Output Power (dBm)**	**Data Rate (Mbps)**	**MIMO Output Power (dBm)**	**Limit (dBm)**
802.11n (20M MIMO) Mode						
Low	5745	5.77	5.78	MCS0	8.79	27.69
Mid	5785	5.50	5.15	MCS0	8.34	27.69
High	5825	5.94	5.56	MCS0	8.76	27.69
802.11n (40M MIMO) Mode						
Low	5755	5.95	5.89	MCS0	8.93	27.69
High	5795	5.87	5.95	MCS0	8.92	27.69

Remark:
ANT 0 Gain= 5.3dBi
ANT 1 Gain= 5.3dBi

$10* \log[10^{(x/10)}+10^{(y/10)}]=8.31$dBi

6. Peak Power Spectrual Density Test

6.1. Test Limit

1) For the band 5.15-5.25 GHz.
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

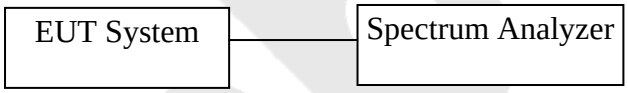
(3) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional

gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

6.2. Test Setup



6.3. Test Procedure

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz).
1. The EUT is directly connected to the spectrum analyzer;
2. Set RBW ≥ 1/T;
3. Set VBW ≥ 3 RBW. ;
3. Set the span to encompass the entire emissions bandwidth (EBW) of the signal;
5. Detector=RMS;
6. Sweep time= auto couple;
7. Trace mode=max. hold;

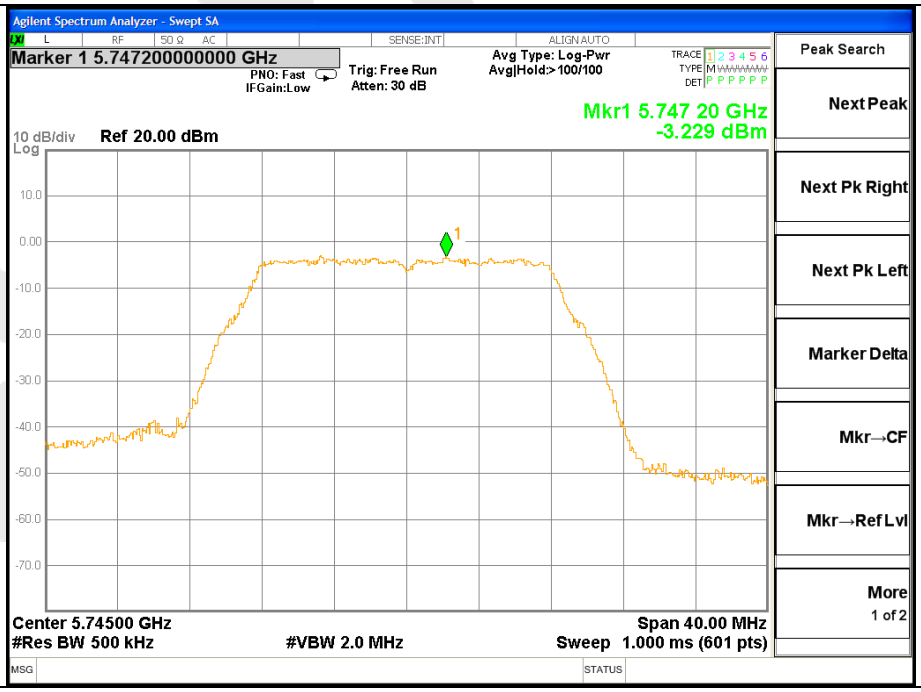
6.4. Test Equipment

Same as clause 4.4.

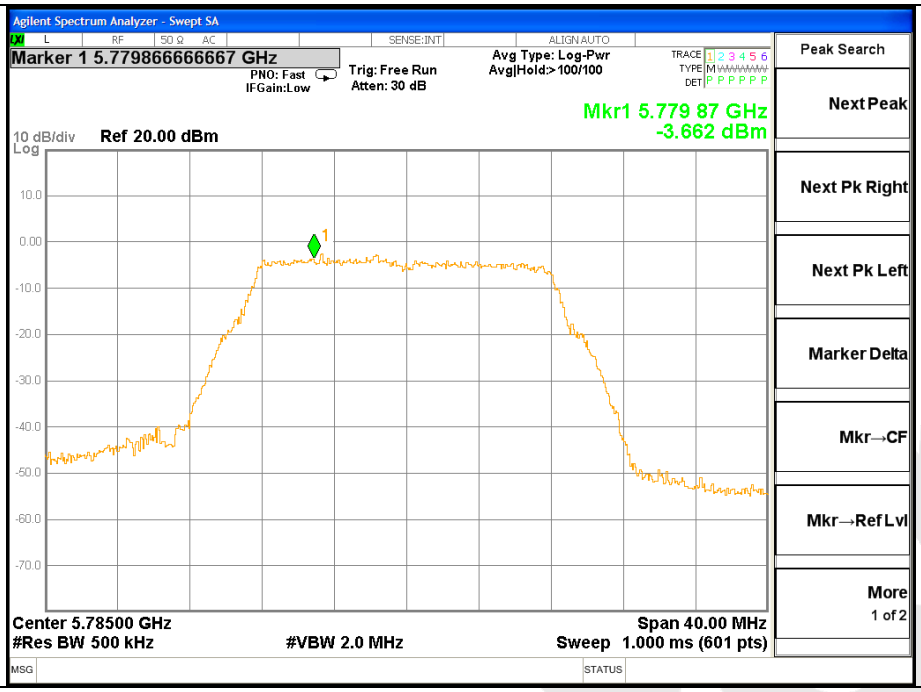
6.5. Test Results

Pass.
Please refer to the following data.

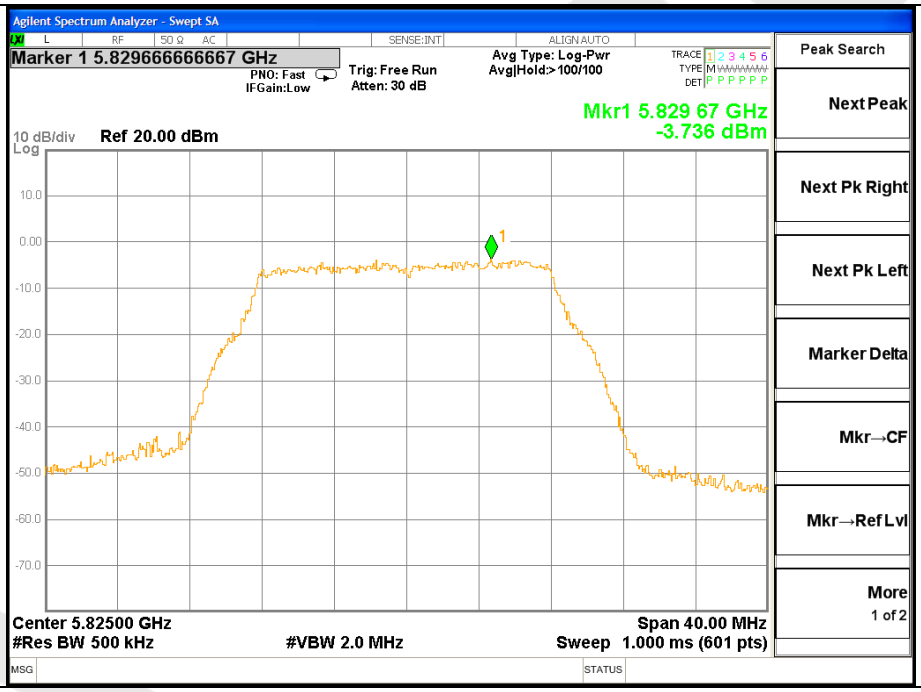
Mode	Frequency (MHz)	Power Density (dBm)		MIMO Power Density (dBm)	Limit (dBm)	Result
		ANT0	ANT1			
802.11a	5745	-3.229	-3.739	--	27.69	Pass
	5785	-3.662	-3.960	--	27.69	Pass
	5825	-3.736	-4.279	--	27.69	Pass
802.11n(HT20)	5745	-2.435	-2.927	0.34	27.69	Pass
	5785	-3.721	-3.229	-0.46	27.69	Pass
	5825	-5.178	-5.219	-2.19	27.69	Pass
802.11n(HT40)	5755	-7.808	-8.259	-5.02	27.69	Pass
	5795	-7.451	-7.730	-4.58	27.69	Pass



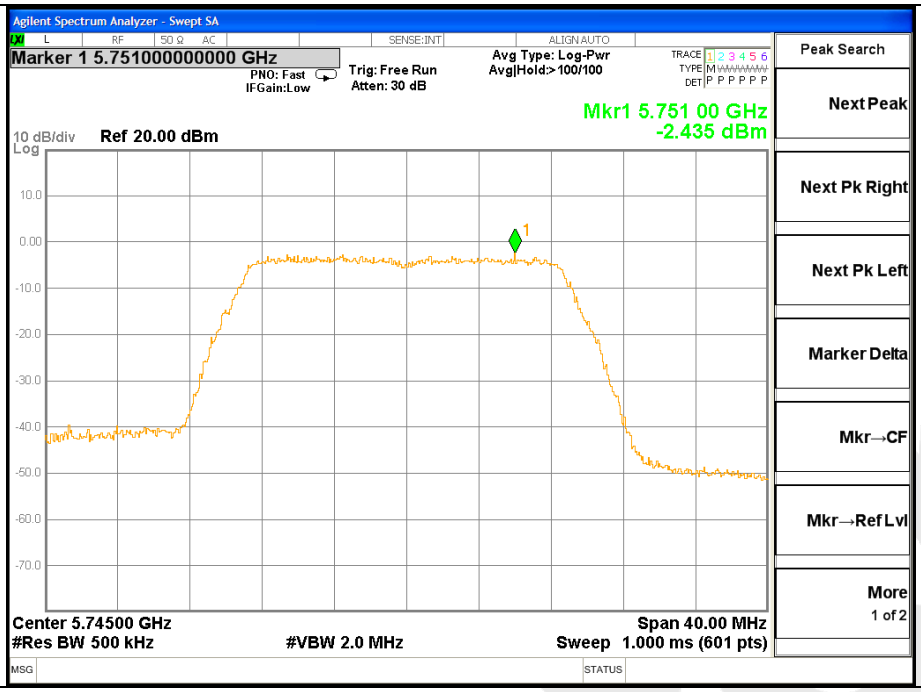
ANT 0---Test Mode: 802.11a---5745



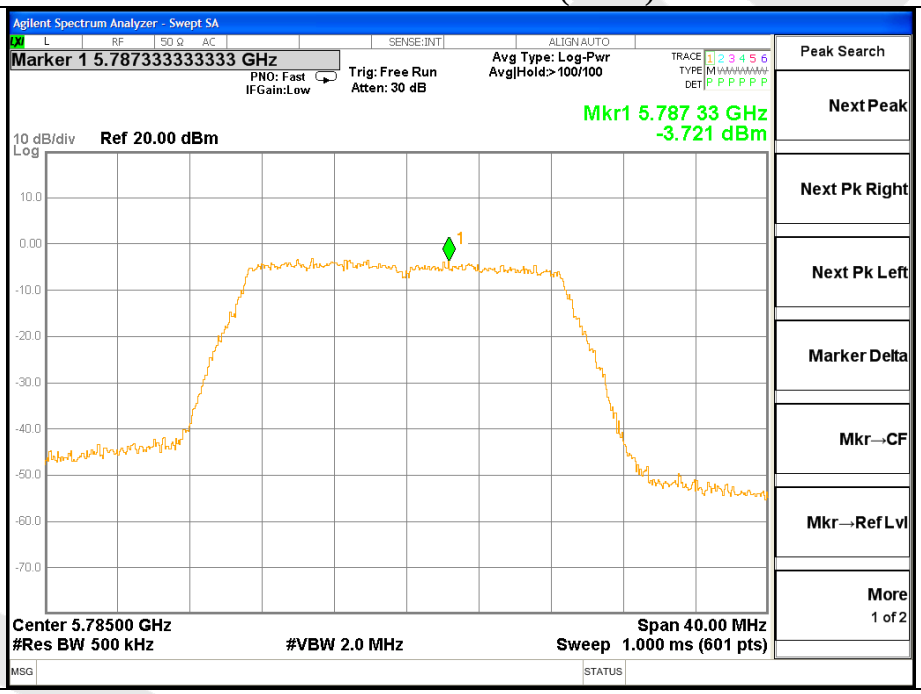
ANT 0---Test Mode: 802.11a---5785



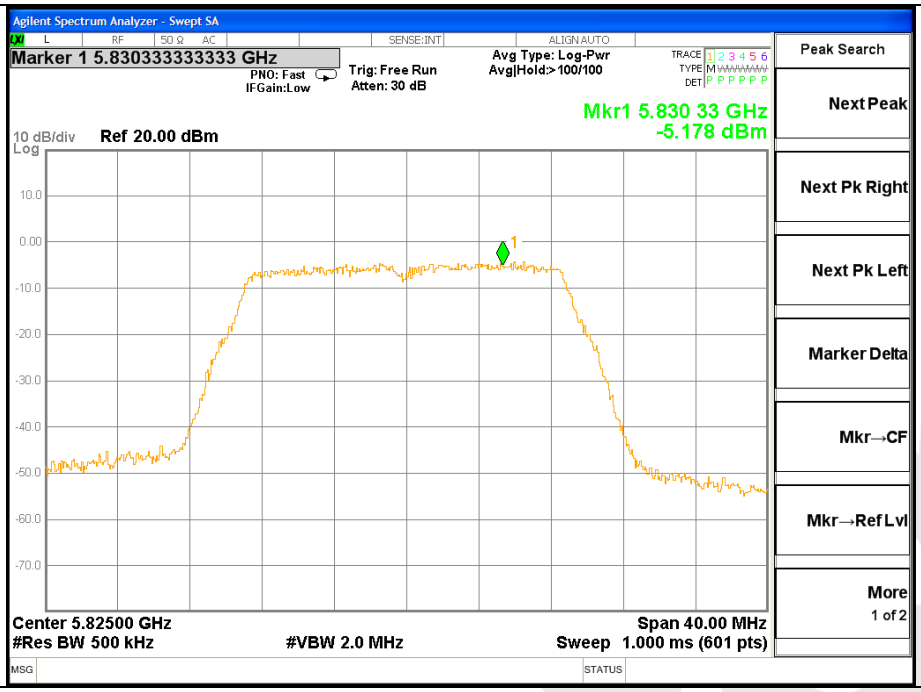
ANT 0---Test Mode: 802.11a---5825



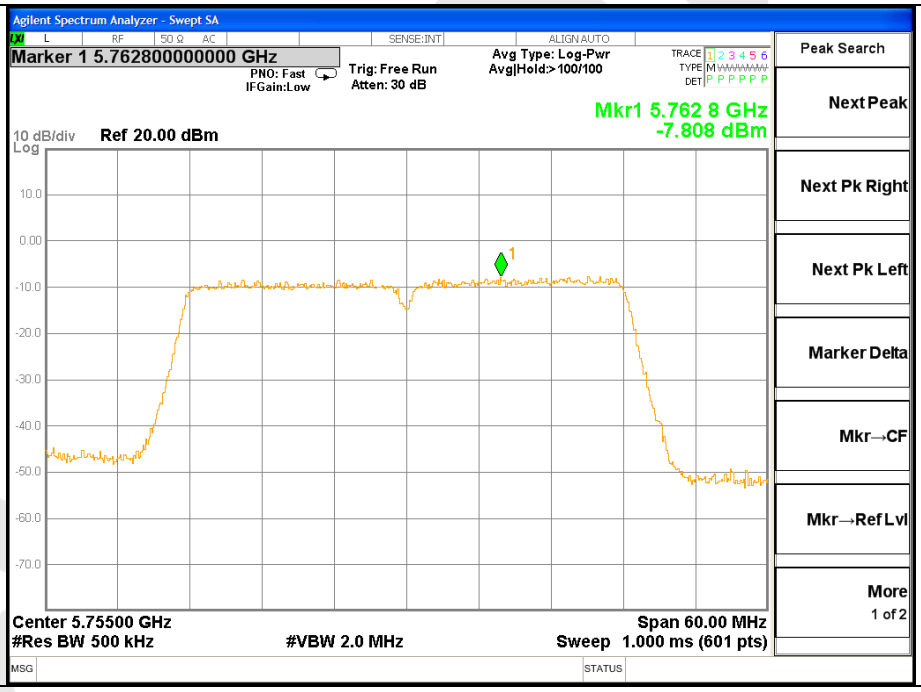
ANT 0---Test Mode: 802.11 n(HT20)---5745



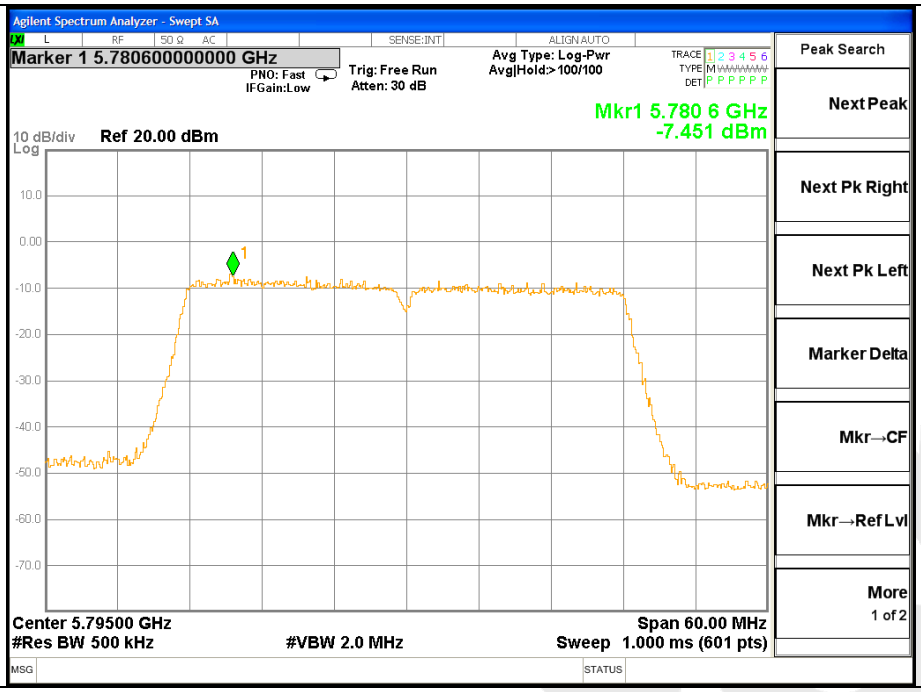
ANT 0---Test Mode: 802.11n(HT20)---5785



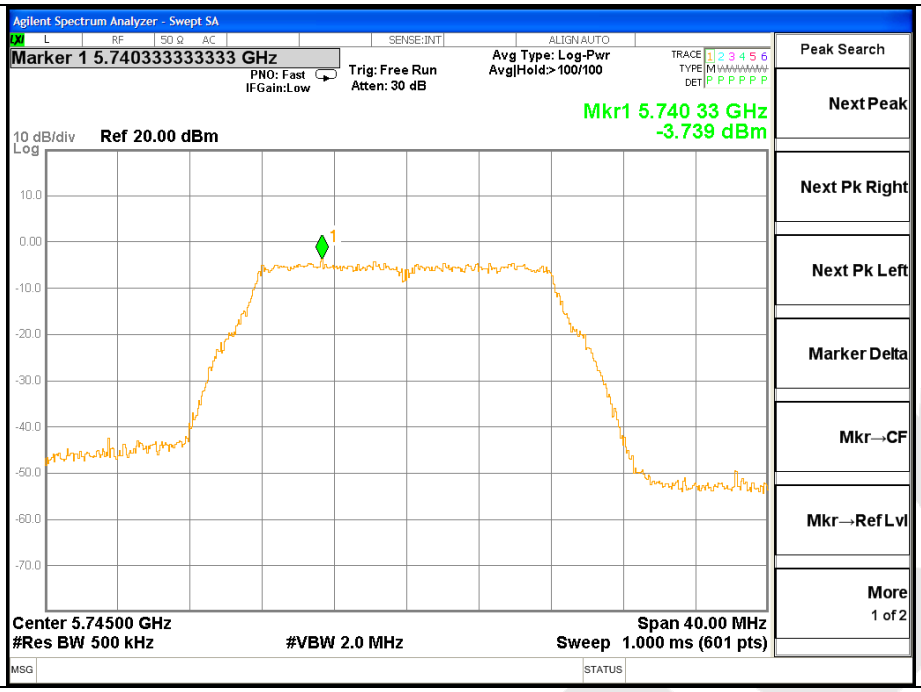
ANT 0---Test Mode: 802.11n(HT20)---5825



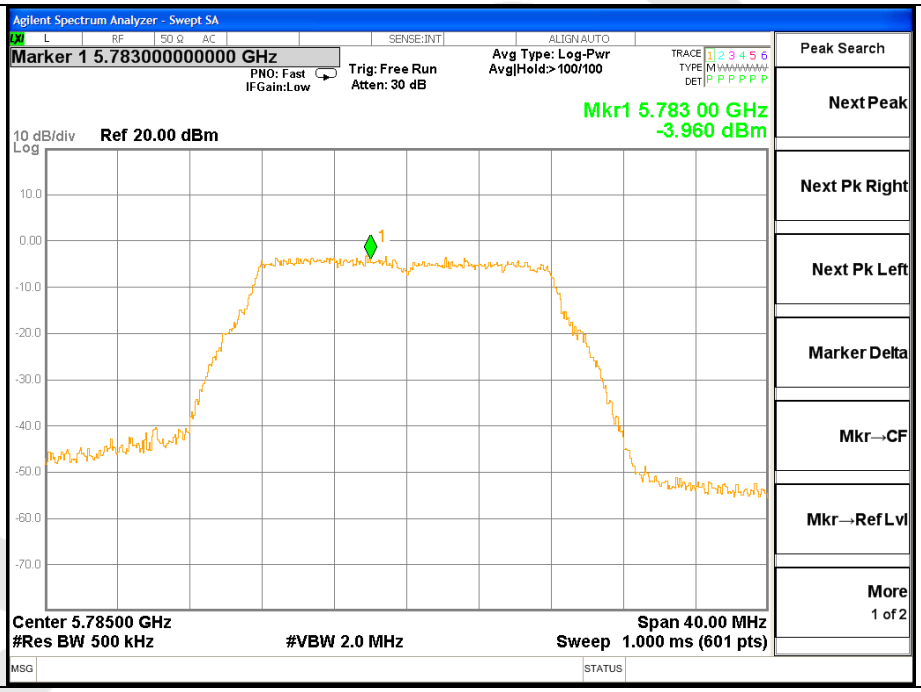
ANT 0---Test Mode: 802.11n(HT40)---5755



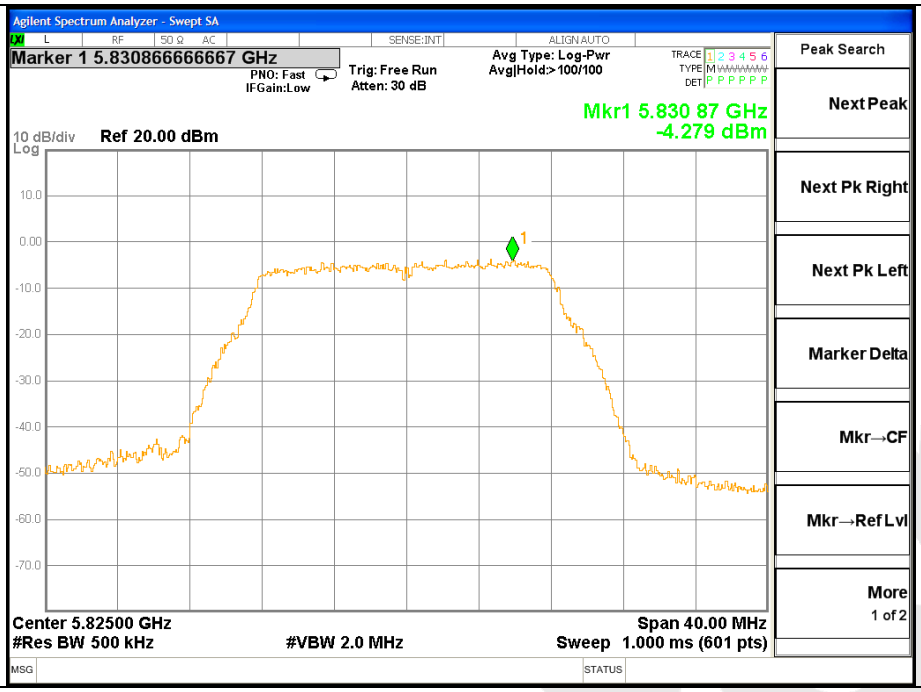
ANT 0---Test Mode: 802.11n(HT40)---5795



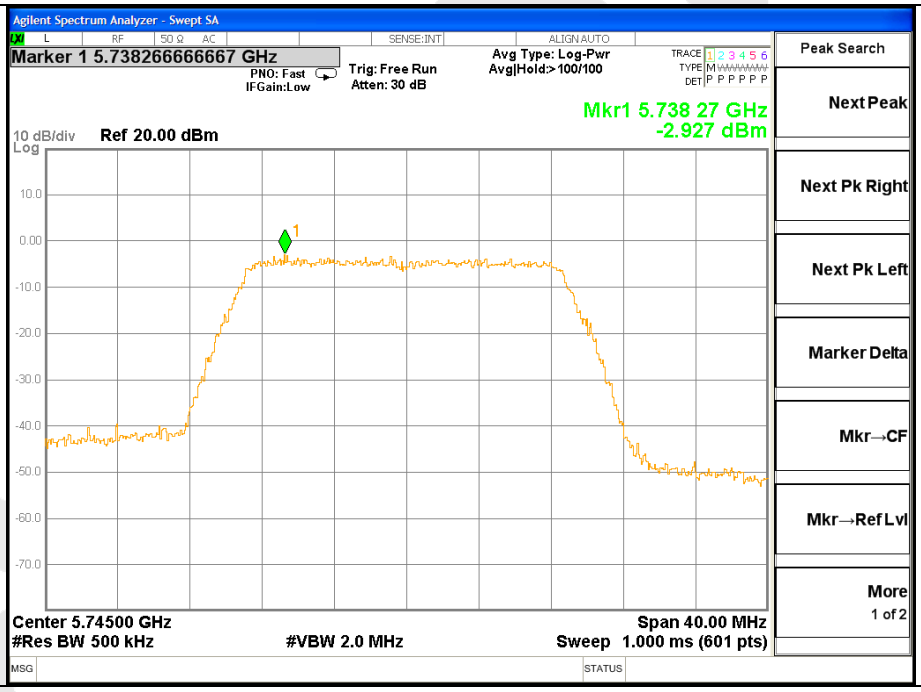
ANT 1---Test Mode: 802.11a---5745



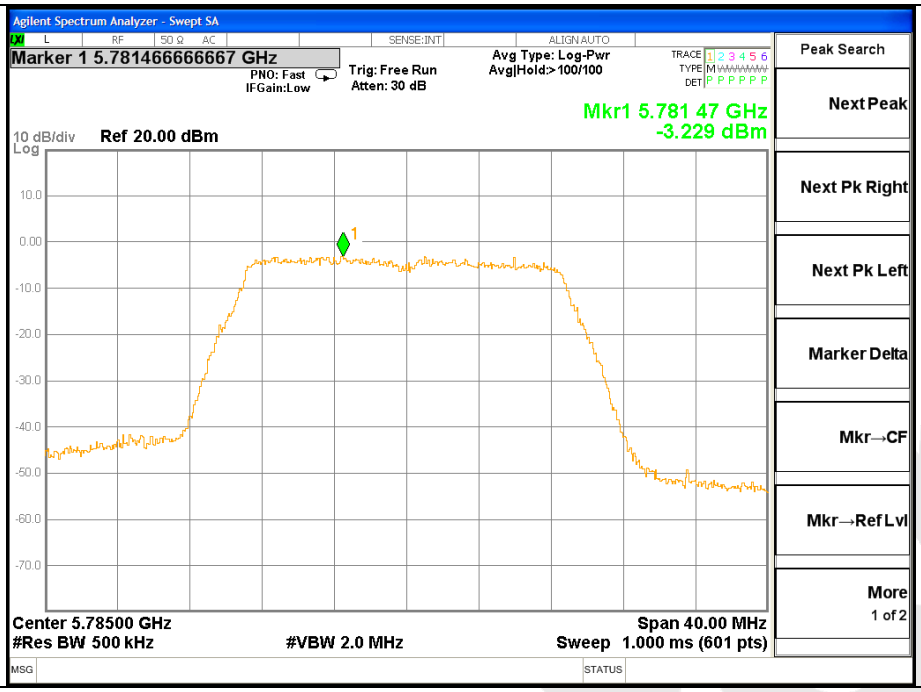
ANT 1---Test Mode: 802.11a---5785



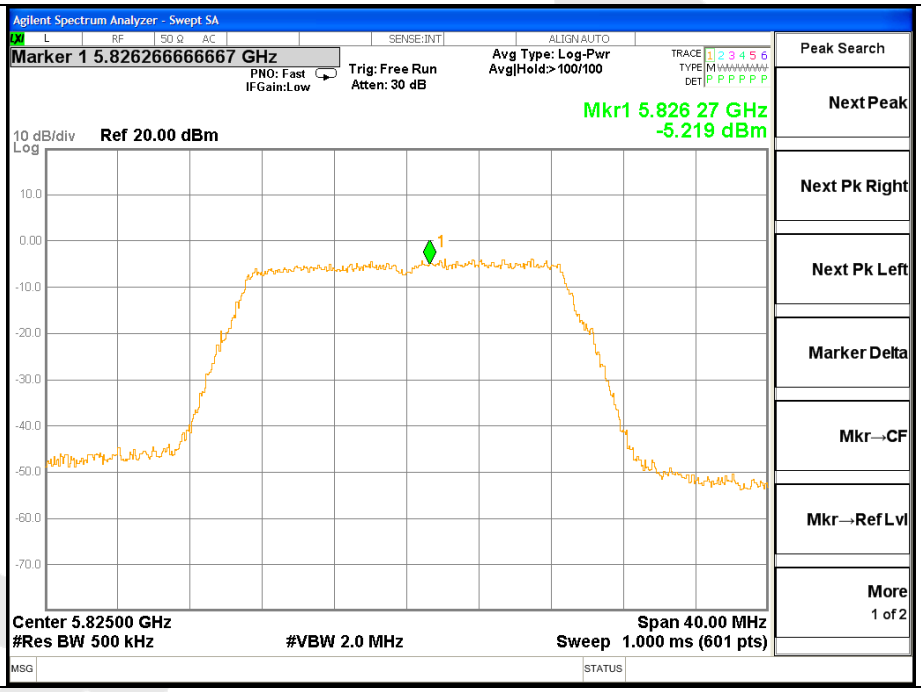
ANT 1---Test Mode: 802.11a---5825



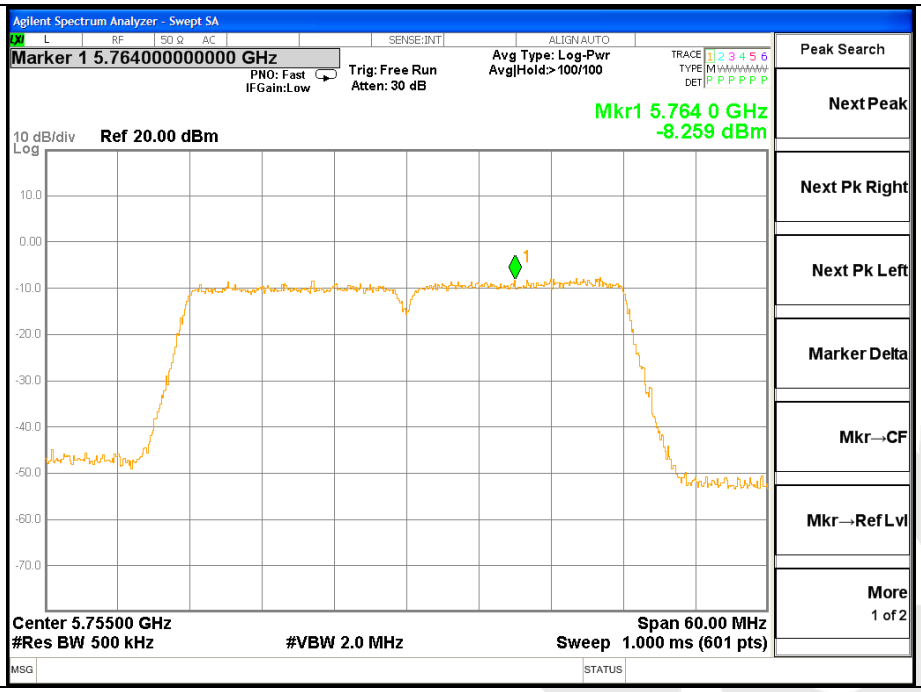
ANT 1---Test Mode: 802.11n(HT20)---5745



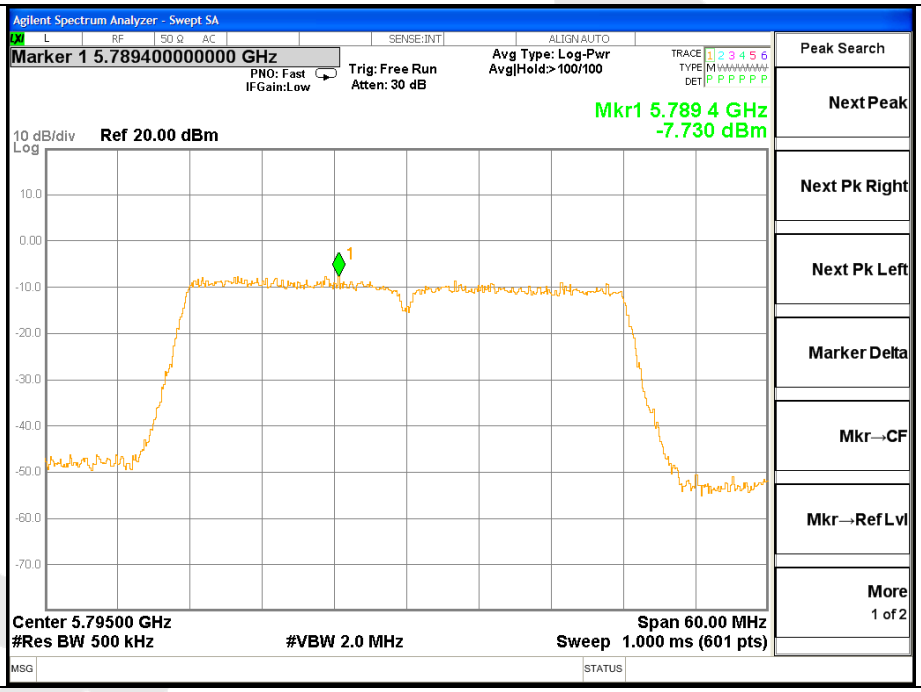
ANT 1---Test Mode: 802.11n(HT20)---5785



ANT 1---Test Mode: 802.11n(HT20)---5825



ANT 1---Test Mode: 802.11n(HT40)---5755



ANT 1---Test Mode: 802.11n(HT40)---5795

7. Radiated Emission Test

7.1. Test Limit

8.1.1. Test Limits (< 30 MHZ)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30

7.1.2. Test Limits (≥ 30 MHZ)

FIELD STRENGTH of Fundamental: @3M	FIELD STRENGTH of Harmonics	S15.209 30 - 88 MHz	40 dBuV/m
902-928 MHZ		88 - 216 MHz	43.5
2.4-2.4835 GHz		216 - 960 MHz	46
94 dBμV/m @3m	54 dBμV/m @3m	ABOVE 960 MHz	54dBuV/m

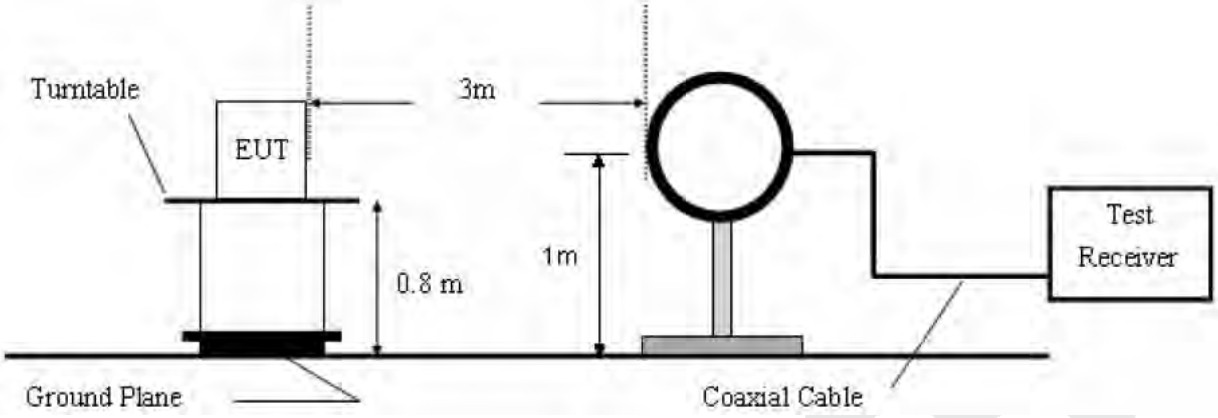
7.1.3. Restriction Band of Operation

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
[1]0.495–0.505	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225	123–138	2200–2300	14.47–14.5
8.291–8.294	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675	156.7–156.9	2690–2900	22.01–23.12
8.41425–8.41475	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293	167.72–173.2	3332–3339	31.2–31.8

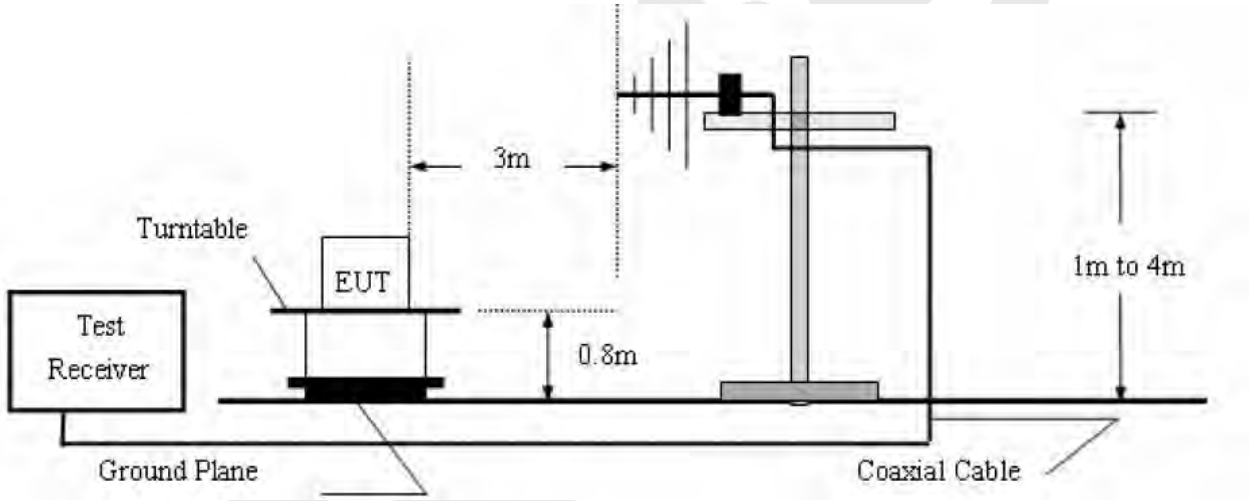
All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

7.2. Test Setup

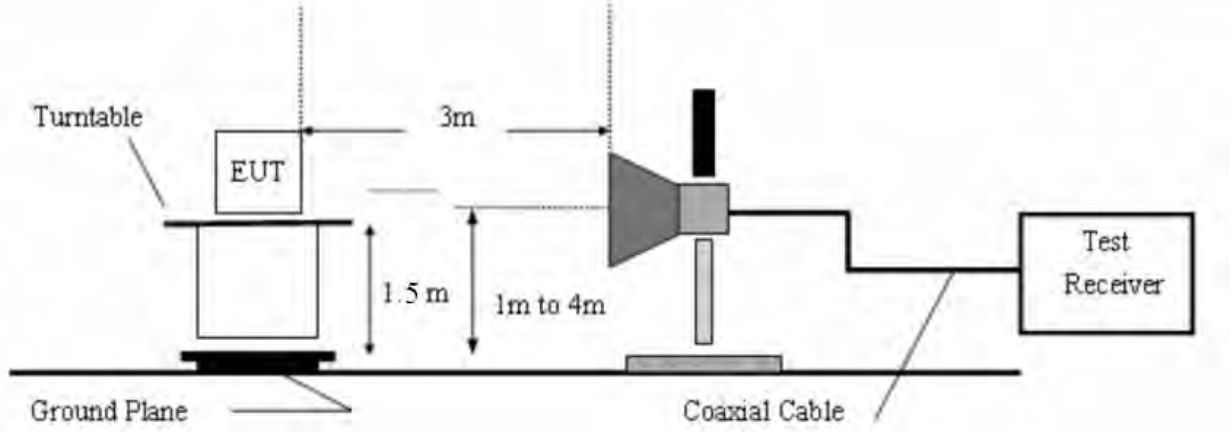
7.2.1. 9k to 30MHz emissions:



7.2.2. 30M to 1G emissions:



7.2.3. 1G to 40G emissions:



7.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.
For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.

The turntable shall be rotated 360 degrees to determine the position of max. emission level. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

Measurements are made on 9KHz to 30MHz and 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz.
The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

The test results are listed in Section 8.5.

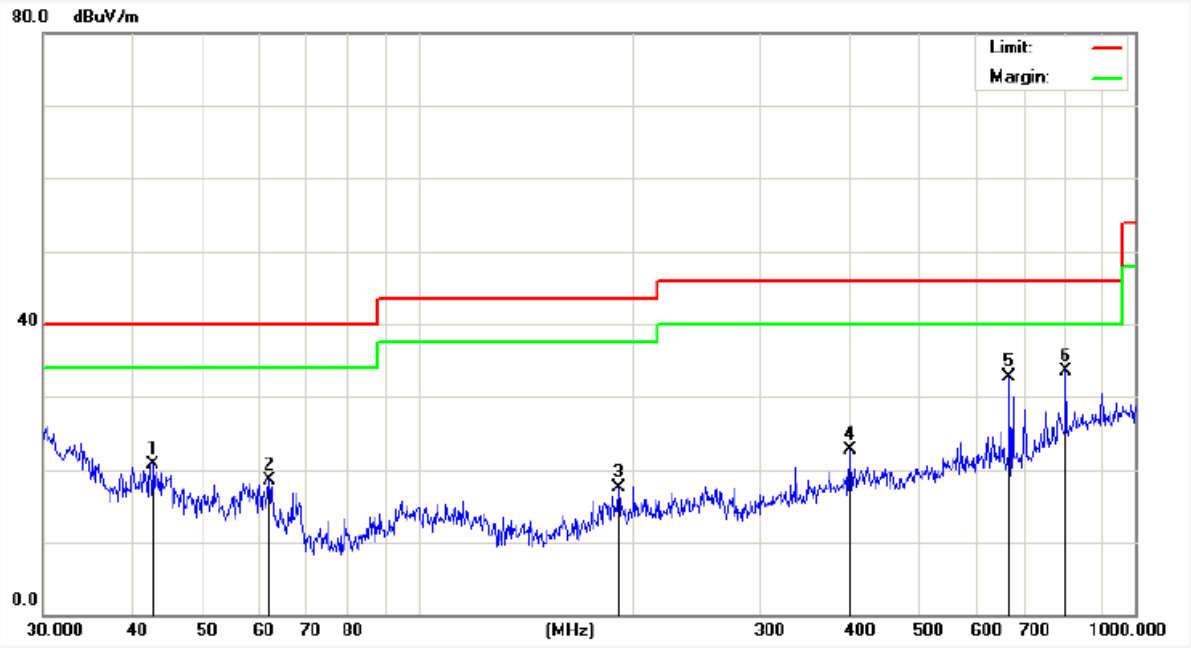
7.4. Test Equipment

Same as clause 4.4.

7.5. Test Results

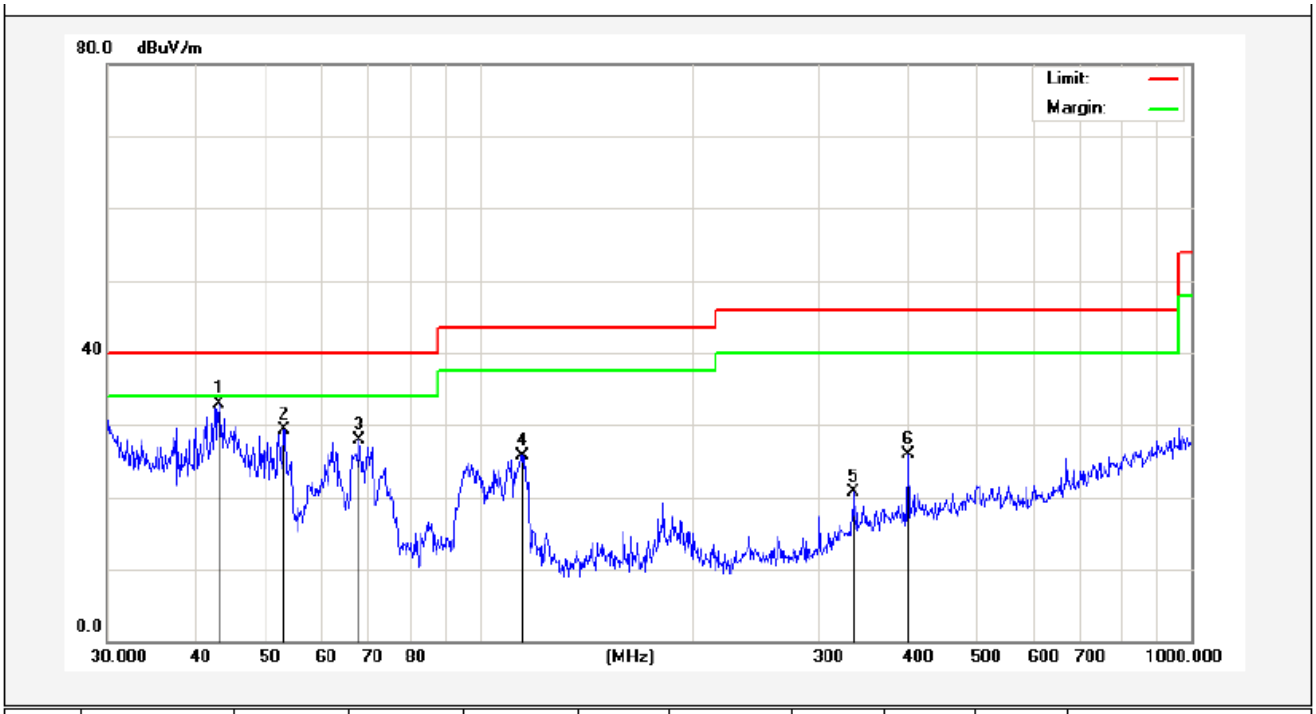
The EUT was tested on (WiFi Mode) is attached in the following pages.
Only the worst case (x orientation).

Job No.:	**011601905I**	**Plarization:**	**Horizontal**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 11.1V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**WiFi Mode**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	42.7496	32.25	-11.45	20.80	40.00	-19.20	peak			
2	61.9951	34.82	-16.22	18.60	40.00	-21.40	peak			
3	190.4050	38.42	-20.92	17.50	43.50	-26.00	peak			
4	400.4318	35.50	-12.86	22.64	46.00	-23.36	peak			
5	668.1422	41.98	-9.35	32.63	46.00	-13.37	peak			
6	801.7862	40.02	-6.54	33.48	46.00	-12.52	peak			

Job No.:	**011601905I**	**Plarization:**	**Vertical**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**DC 11.1V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**WiFi Mode**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	43.0504	44.55	-11.57	32.98	40.00	-7.02	peak			
2	53.1313	44.11	-14.79	29.32	40.00	-10.68	peak			
3	67.9128	46.59	-18.73	27.86	40.00	-12.14	peak			
4	114.9167	41.70	-15.97	25.73	43.50	-17.77	peak			
5	336.0350	34.10	-13.49	20.61	46.00	-25.39	peak			
6	400.4318	37.78	-11.86	25.92	46.00	-20.08	peak			

The EUT was tested on (IEEE 802.11a, IEEE 802.11n(HT20), IEEE 802.11n(HT40))modes, only the worst data of (IEEE 802.11n(HT20)) is attached in the following pages.

Test mode: IEEE 802.11n(HT20)
Low Channel(5745MHz)

Frequency	Antenna	Reading	Cable Loss	Ant Factor	Amplifier	Corrected Level	Limits	Det
(MHz)	Polarization	(dBuV/m)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	Mode
11490	H	47.02	3.63	38.2	32.1	56.75	74	PK
11490	H	39.95	3.63	38.2	32.1	49.68	54	AV
11490	V	47.90	3.63	38.2	32.1	57.63	74	PK
11490	V	39.78	3.63	38.2	32.1	49.51	54	AV
17235	H	47.75	5.85	39.8	31.75	61.65	74	PK
17235	H	36.51	5.85	39.8	31.75	50.41	54	AV
17235	V	44.57	5.85	39.8	31.75	58.47	74	PK
17235	V	36.62	5.85	39.8	31.75	50.52	54	AV
22980	H	--	7.97	40.2	40.4	--	74	PK
22980	H	--	7.97	40.2	40.4	--	54	AV
22980	V	--	7.97	40.2	40.4	--	74	PK
22980	V	--	7.97	40.2	40.4	--	54	AV

Middle Channel(5785MHz)

Frequency	Antenna	Reading	Cable Loss	Ant Factor	Amplifier	Corrected Level	Limits	Det
(MHz)	Polarization	(dBuV/m)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	Mode
11570	H	47.56	3.66	38.2	32.1	57.32	74	PK
11570	H	39.60	3.66	38.2	32.1	49.36	54	AV
11570	V	47.86	3.66	38.2	32.1	57.62	74	PK
11570	V	40.30	3.66	38.2	32.1	50.06	54	AV
17355	H	47.86	5.88	39.8	31.75	61.79	74	PK
17355	H	37.07	5.88	39.8	31.75	51.00	54	AV
17355	V	44.94	5.88	39.8	31.75	58.87	74	PK
17355	V	37.93	5.88	39.8	31.75	51.86	54	AV
23140	H	--	7.95	40.2	40.4	--	74	PK
23140	H	--	7.95	40.2	40.4	--	54	AV
23140	V	--	7.95	40.2	40.4	--	74	PK
23140	V	--	7.95	40.2	40.4	--	54	AV

High Channel(5825MHz)

Frequency	Antenna	Reading	Cable Loss	Ant Factor	Amplifier	Corrected Level	Limits	Det
(MHz)	Polarization	(dBuV/m)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	Mode
11650	H	47.39	3.68	38.2	32.1	57.17	74	PK
11650	H	39.69	3.68	38.2	32.1	49.47	54	AV
11650	V	47.88	3.68	38.2	32.1	57.66	74	PK
11650	V	39.60	3.68	38.2	32.1	49.38	54	AV
17475	H	47.75	5.89	39.8	31.75	61.69	74	PK
17475	H	37.00	5.89	39.8	31.75	50.94	54	AV
17475	V	45.47	5.89	39.8	31.75	59.41	74	PK
17475	V	36.58	5.89	39.8	31.75	50.52	54	AV
23300	H	--	7.98	40.2	40.4	--	74	PK
23300	H	--	7.98	40.2	40.4	--	54	AV
23300	V	--	7.98	40.2	40.4	--	74	PK
23300	V	--	7.98	40.2	40.4	--	54	AV

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit
Note: 2. Remark “---” means that the emissions level is too low to be measured

8. Band Edge Test

8.1. Test Limit

For transmitter operating in the 5.15-5.25GHz band: all emissions outside of the 5.15-5.35GHz outside of the 5.15-5.35GHz band shall not exceed an EIRP of -27dBm/MHz.

For transmitters operating in the 5.25-5.35GHz band: all emissions outside of the 5.15-5.35GHz band shall not exceed an EIRP of -27dBm/MHz. Devices operating in the 5.25-5.35GHz band that generate emissions in the 5.15-5.25GHz band must meet all applicable technical requirements for operation in the 5.15-5.25GHz band (includeing indoor use) or alternatively meet an out-of-band emission EIRP limit of -27dBm/MHz in the 5.15-5.25GHz band.

For transmitters operating in the 5.45-5.725GHz band: all emissions outside of the 5.47-5.725GHz band shall not exceed an EIRP of -27dBm/MHz.

For transmitters operating in the 5.725-5.825GHz band: all emissions within the frequency range from the band edge to 10MHz above or below the band edge shall not exceed an EIRP of -17dBm/MHz; for frequencies 10MHz or greater above or below the band edge, emssions shall not exceed an EIRP of -27dBm/MHz.

8.2. Test Setup

Same as clause 7.2.

8.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.
For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.

The turntable shall be rotated 360 degrees to determine the position of max. emission level. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

Measurements are made on 9KHz to 30MHz and 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz.
The EUT is tested in 9*6*6 Chamber.

The test results are listed in Section 9.5.

8.4. Test Equipment

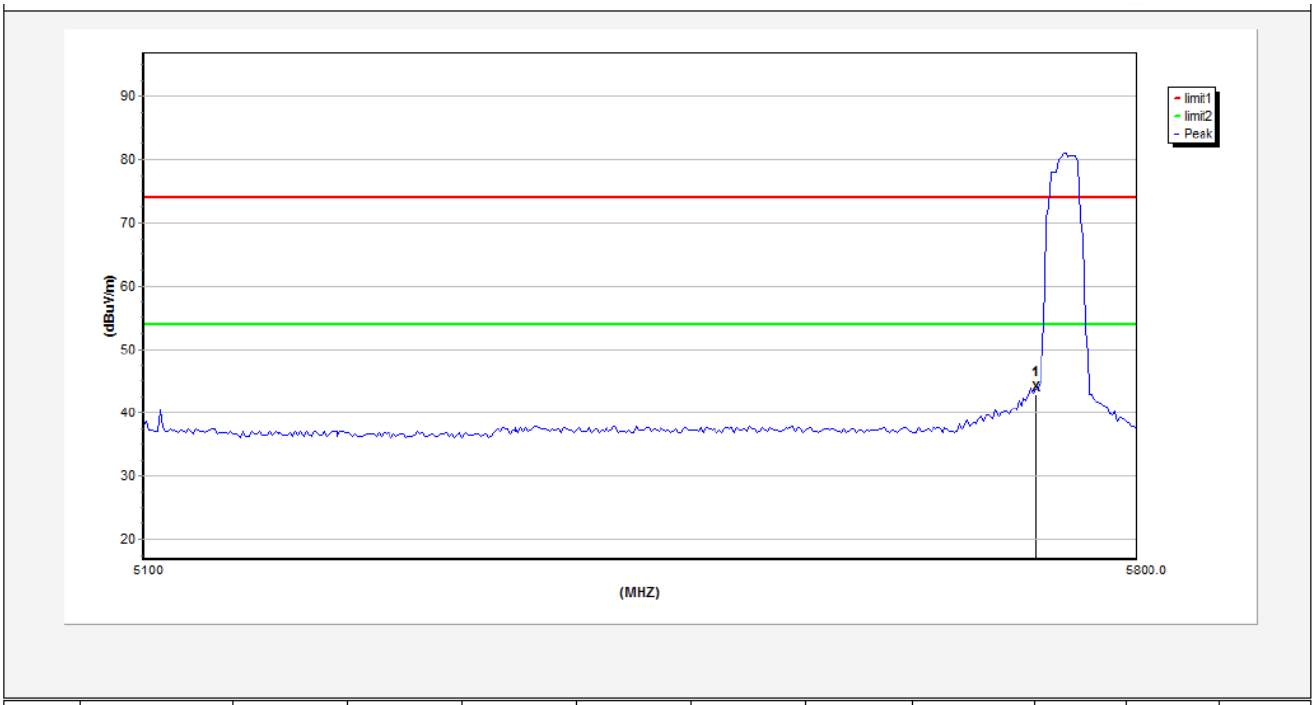
Same as clause 4.4.

8.5. Test Results

Please refer to the following pages.

The EUT was tested on (IEEE 802.11a, IEEE 802.11n(HT20), IEEE 802.11n(HT40))modes, only the worst data of (IEEE 802.11n(HT20)) is attached in the following pages.

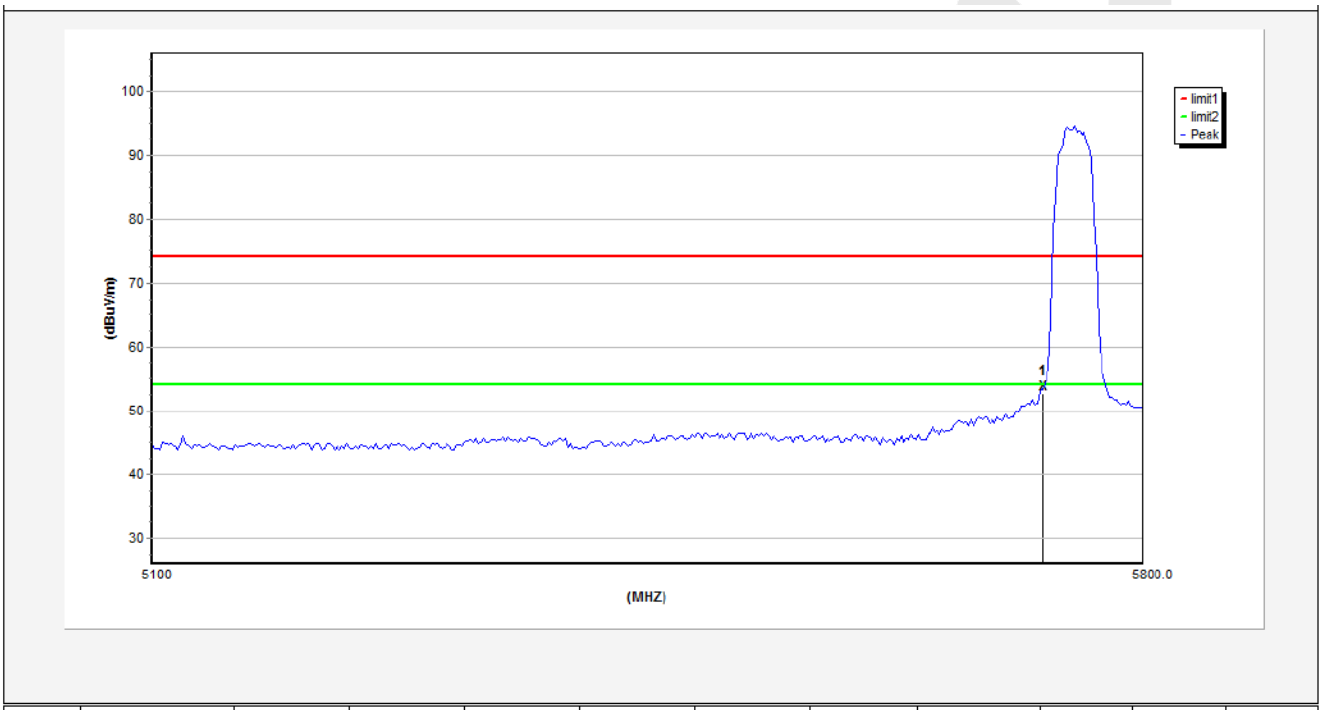
Job No.:	**011601905I**	**Plarization:**	**Horizontal-PEAK**
Standard:	**(RE)FCC PART15 E _3m**	**Power Source:**	**DC 11.1V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**IEEE 802.11n(HT20) (5745MHz)**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Antenna (dB/m)	Amp. (dB/m)	Cable (dB/m)	Result (dBuV/m)	Limit (dBuV/m	Over Limit (dB)	Detector	Height (cm)	degree (deg)
1	5725.0000	38.48	5.39	16.89	16.9	43.88	74.00	-30.12	peak	---	---

Remark:
According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

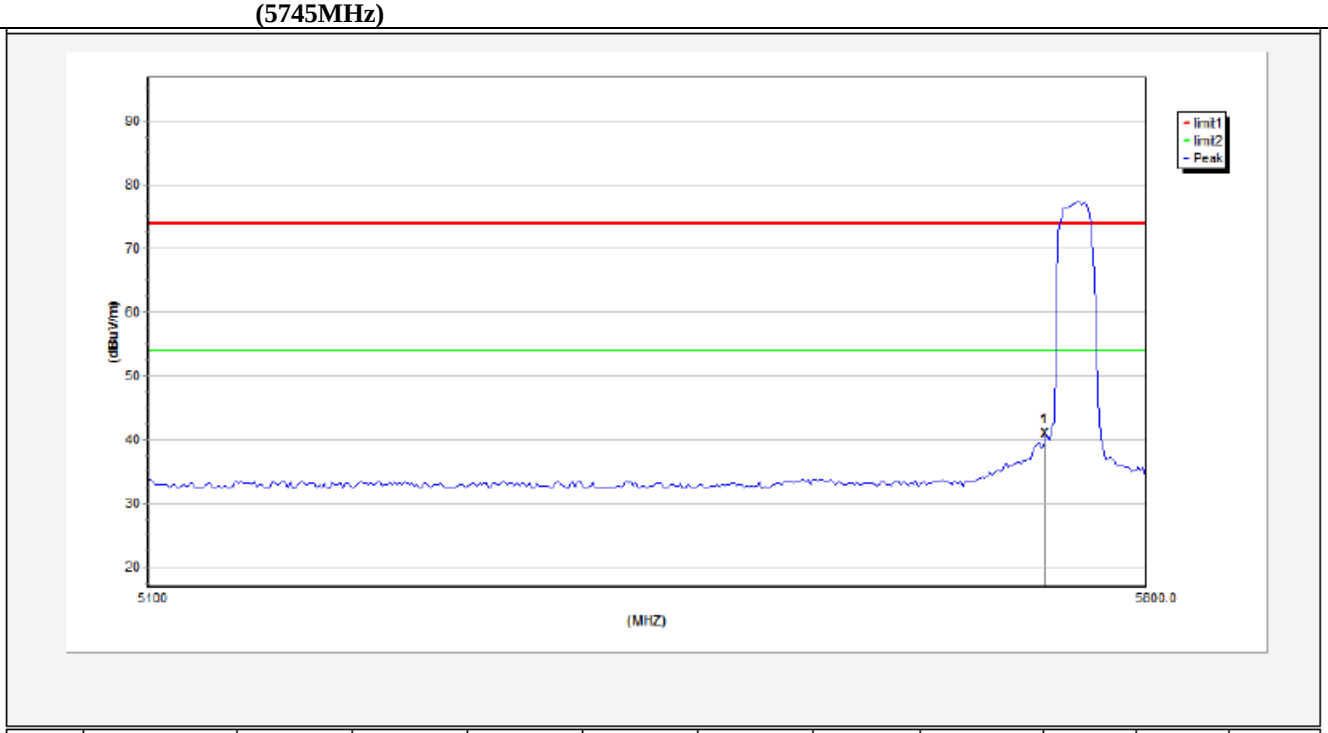
Job No.:	**011601905I**	**Plarization:**	**Vertical-PEAK**
Standard:	**(RE)FCC PART15 E _3m**	**Power Source:**	**DC 11.1V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**IEEE 802.11n(HT20) (5745MHz)**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Antenna (dB/m)	Amp. (dB/m)	Cable (dB/m)	Result (dBuV/m)	Limit (dBuV/m	Over Limit (dB)	Detector	Height (cm)	degree (deg)
1	5725.0000	48.16	5.39	16.89	16.9	53.56	74.00	-20.44	peak	---	---

Remark:
According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

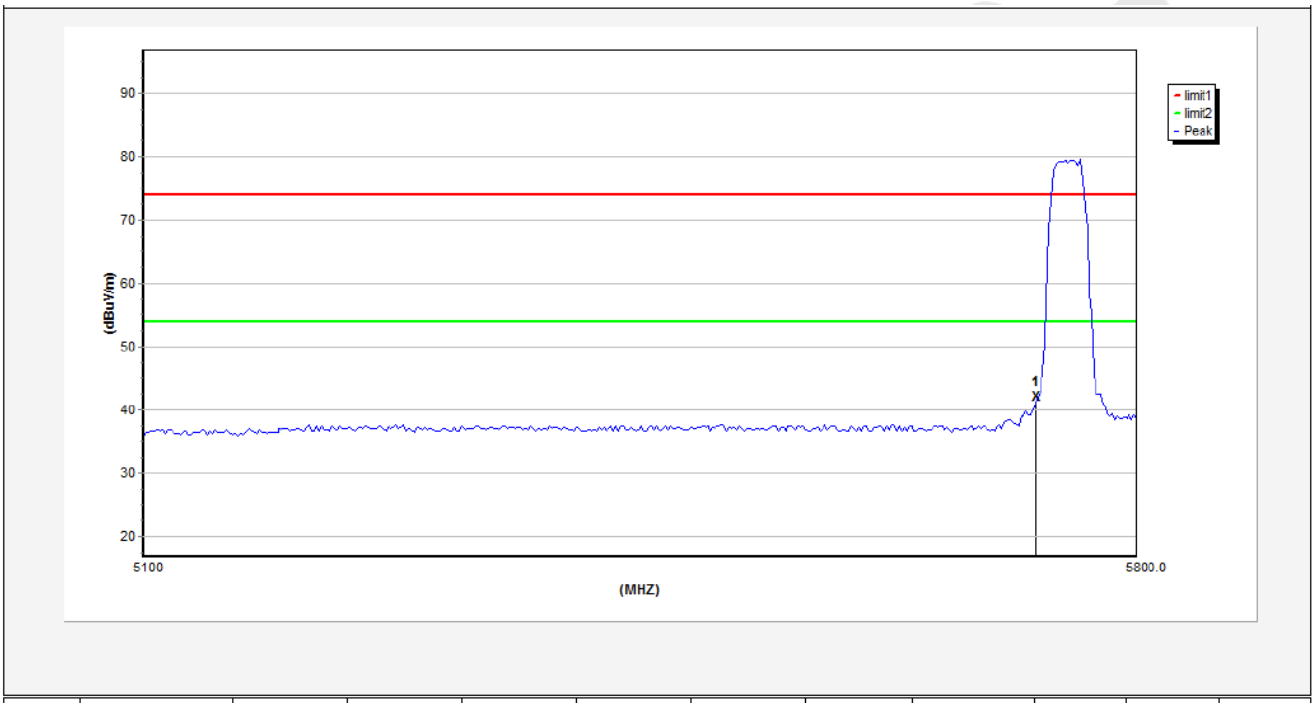
Job No.:	**011601905I**	**Plarization:**	**Horizontal-AV**
Standard:	**(RE)FCC PART15 E _3m**	**Power Source:**	**DC 11.1V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**IEEE 802.11n(HT20) (5745MHz)**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Antenna (dB/m)	Amp. (dB/m)	Cable (dB/m)	Result (dBuV/m)	Limit (dBuV/m	Over Limit (dB)	Detector	Height (cm)	degree (deg)
1	5725.0000	35.41	5.39	16.89	16.9	40.81	54.00	-13.19	AVG	---	---

Remark:
According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

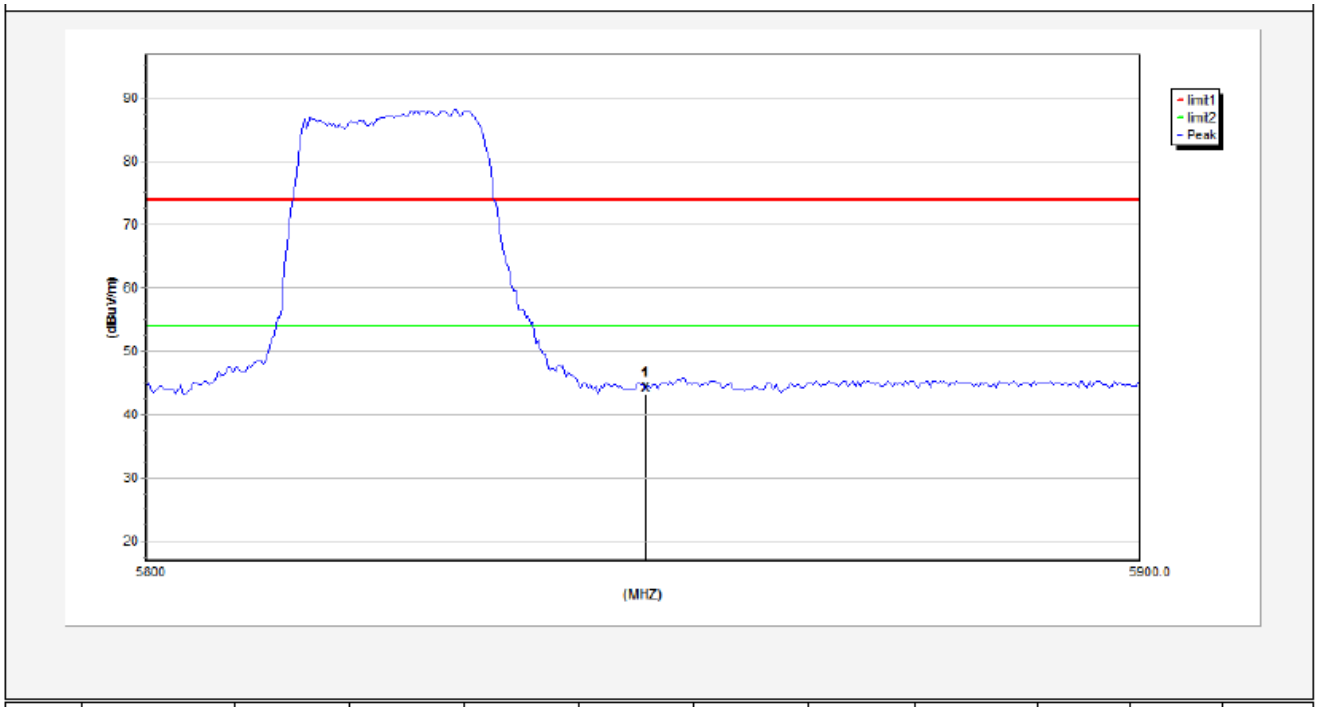
Job No.:	**011601905I**	**Plarization:**	**Vertical-AV**
Standard:	**(RE)FCC PART15 E _3m**	**Power Source:**	**DC 11.1V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**IEEE 802.11n(HT20) (5745MHz)**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Antenna (dB/m)	Amp. (dB/m)	Cable (dB/m)	Result (dBuV/m)	Limit (dBuV/m	Over Limit (dB)	Detector	Height (cm)	degree (deg)
1	5725.0000	36.68	5.39	16.89	16.9	42.08	54.00	-11.92	AVG	---	---

Remark:
According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

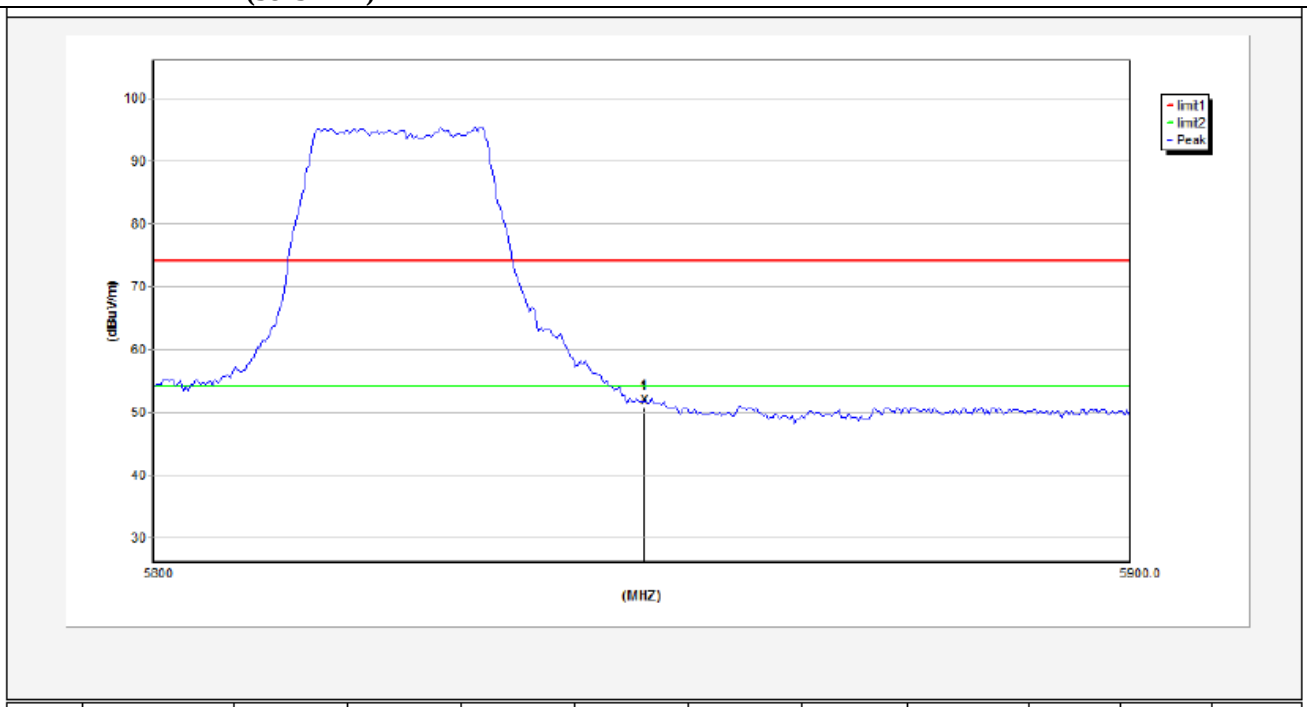
Job No.:	**011601905I**	**Plarization:**	**Horizontal-PEAK**
Standard:	**(RE)FCC PART15 E _3m**	**Power Source:**	**DC 11.1V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**IEEE 802.11n(HT20) (5825MHz)**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Antenna (dB/m)	Amp. (dB/m)	Cable (dB/m)	Result (dBuV/m)	Limit (dBuV/m	Over Limit (dB)	Detector	Height (cm)	degree (deg)
1	5850.0000	37.87	6.18	16.8	16.81	44.06	74.00	-29.94	peak	---	---

Remark:
According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

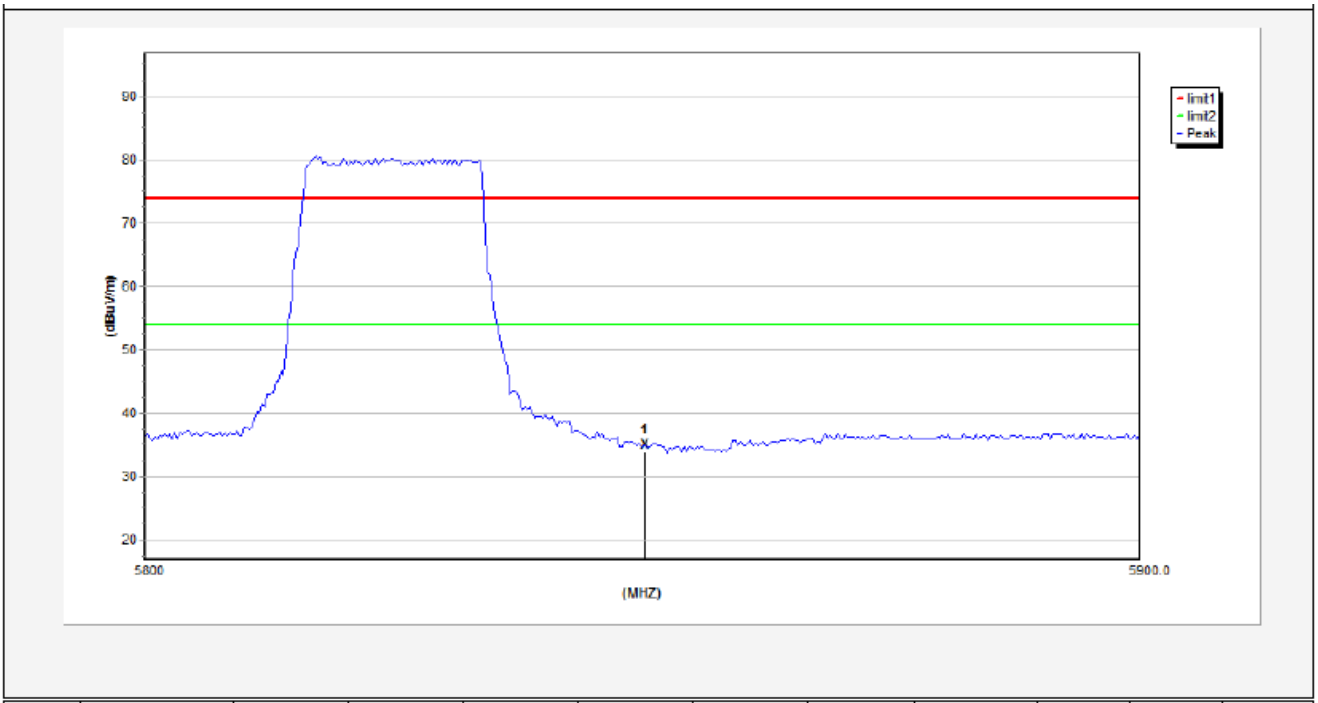
Job No.:	**011601905I**	**Plarization:**	**Vertical-PEAK**
Standard:	**(RE)FCC PART15 E _3m**	**Power Source:**	**DC 11.1V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**IEEE 802.11n(HT20) (5825MHz)**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Antenna (dB/m)	Amp. (dB/m)	Cable (dB/m)	Result (dBuV/m)	Limit (dBuV/m	Over Limit (dB)	Detector	Height (cm)	degree (deg)
1	5850.0000	45.57	6.18	16.8	16.81	51.76	74.00	-22.24	peak	---	---

Remark:
According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

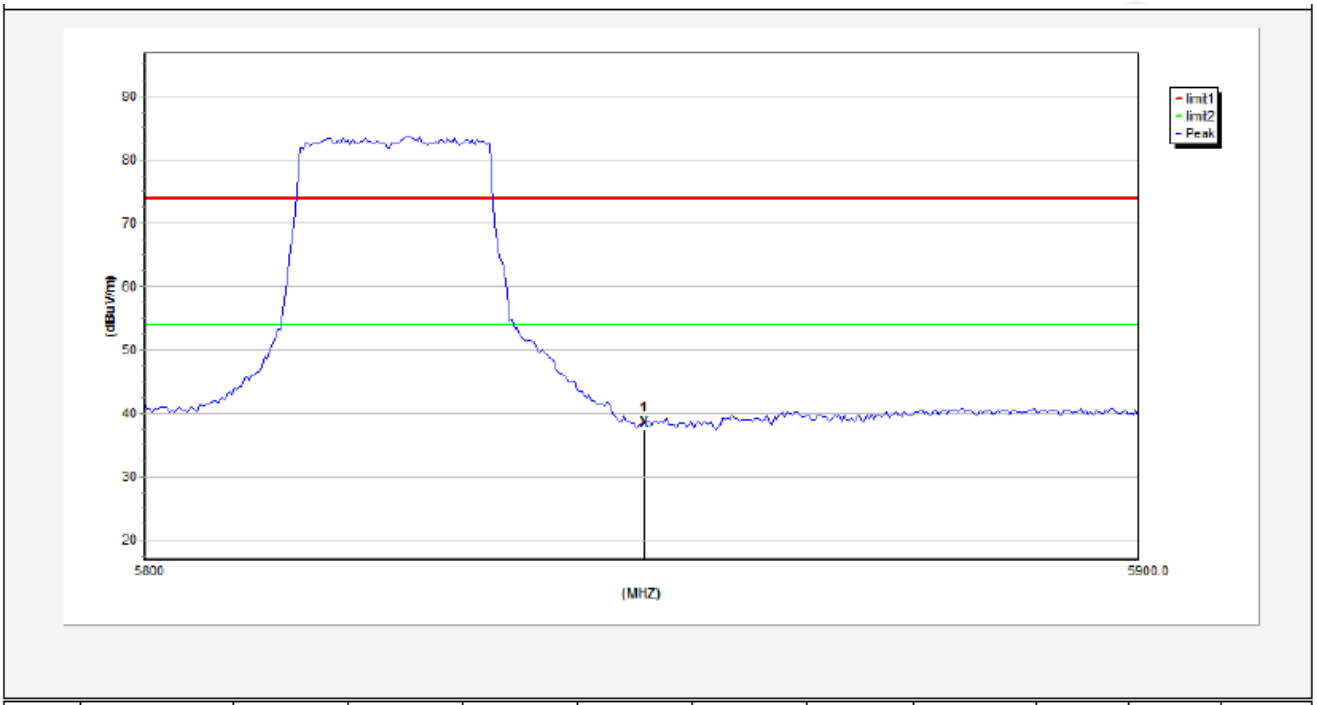
Job No.:	**011601905I**	**Plarization:**	**Horizontal-AV**
Standard:	**(RE)FCC PART15 E _3m**	**Power Source:**	**DC 11.1V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**IEEE 802.11n(HT20) (5745MHz)**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Antenna (dB/m)	Amp. (dB/m)	Cable (dB/m)	Result (dBuV/m)	Limit (dBuV/m	Over Limit (dB)	Detector	Height (cm)	degree (deg)
1	5850.0000	28.76	6.18	16.8	16.81	34.95	54.00	-19.05	AVG	---	---

Remark:
According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

Job No.:	**011601905I**	**Plarization:**	**Vertical-AV**
Standard:	**(RE)FCC PART15 E _3m**	**Power Source:**	**DC 11.1V**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**IEEE 802.11n(HT20) (5825MHz)**	**Distance:**	**3m**



No.	Freq. (MHz)	Reading (dBuV/m)	Antenna (dB/m)	Amp. (dB/m)	Cable (dB/m)	Result (dBuV/m)	Limit (dBuV/m	Over Limit (dB)	Detector	Height (cm)	degree (deg)
1	5850.0000	32.31	6.18	16.8	16.81	38.50	54.00	-15.50	AVG	---	---

Remark:
According to KDB 789033 section g (2), for measurement above 1000MHz @3m distance, out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

9. ANTENNA APPLICATION

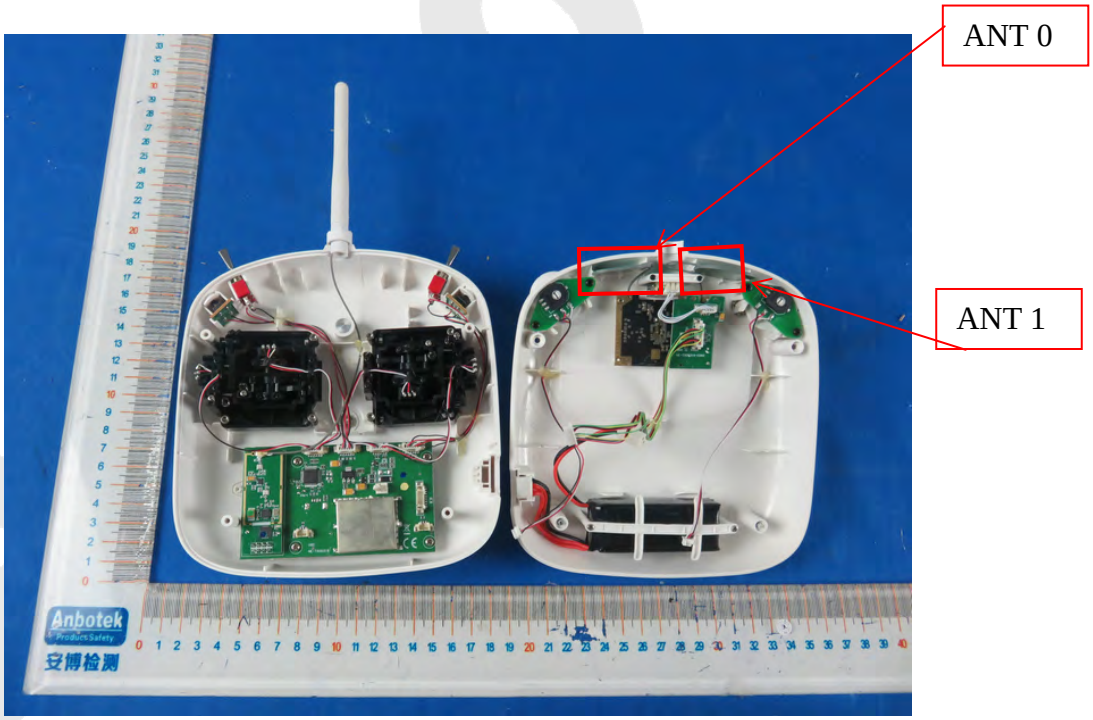
9.1. Antenna requirement

The EUT'S antenna is met the requirement of FCC part 15C section 15.407.

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

9.2. Result

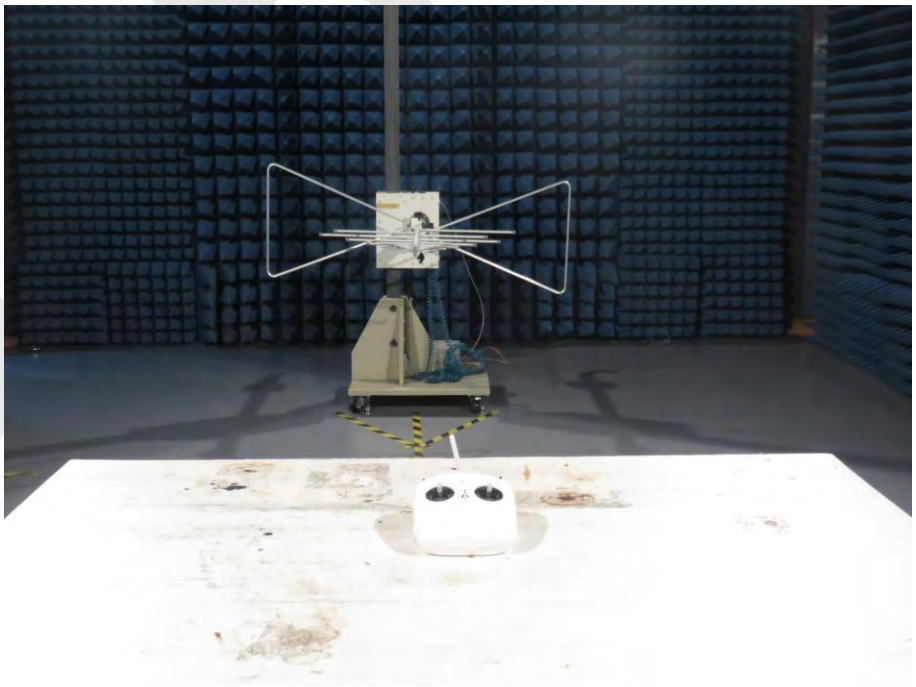
The EUT's antenna used a copper Antenna, which is permanently attached to the PCB with glue, The antenna's gain is 5dBi and meets the requirement.

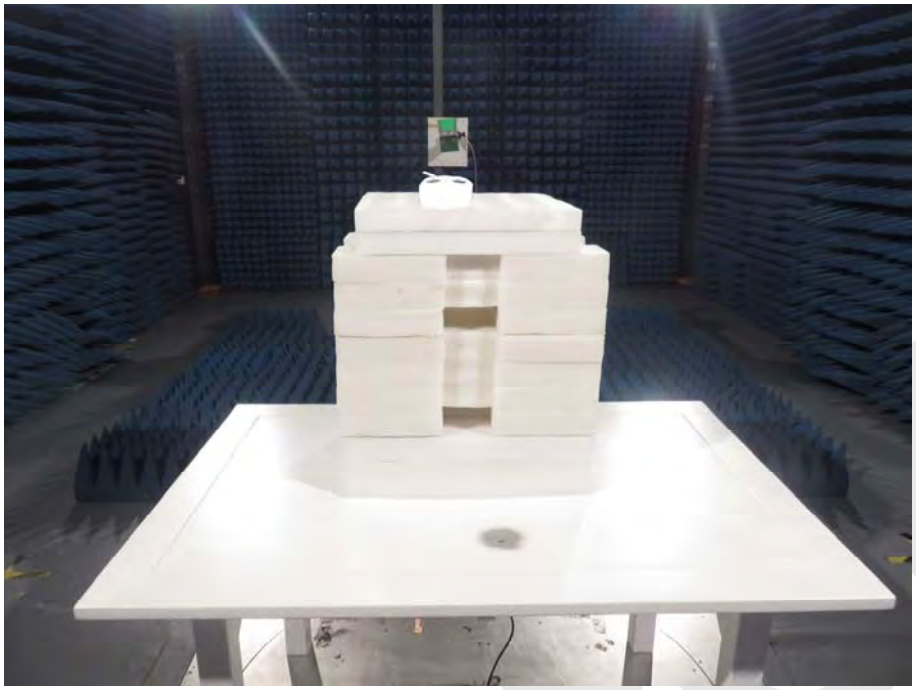


10. PHOTOGRAPH

10.1 Photo of Power Line Conducted Emission Measurement

10.2. Photo of Radiation Emission Test





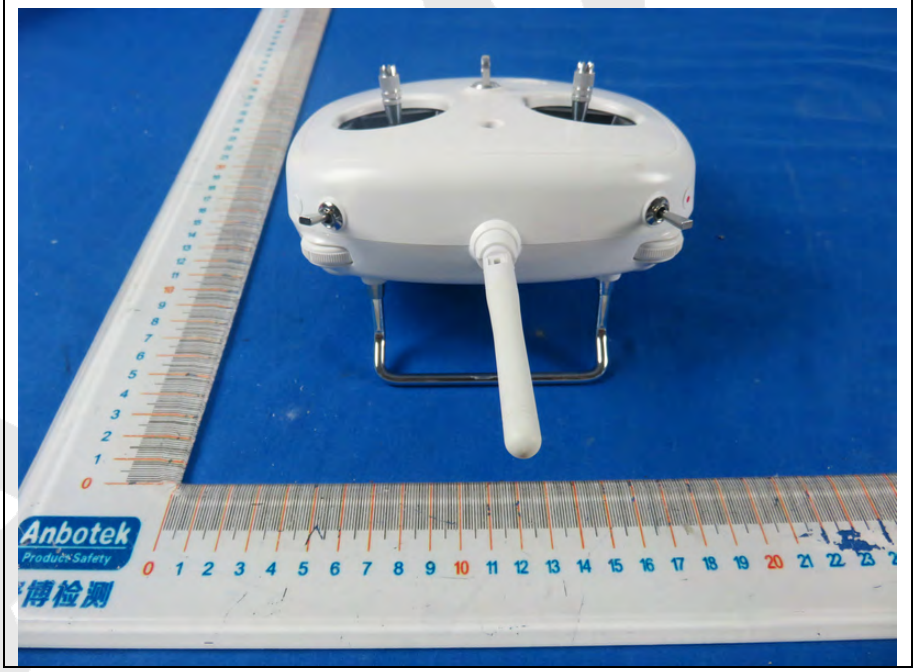
APPENDIX I (EXTERNAL PHOTOS)

1. Figure
The EUT-Top View

2. Figure
The EUT-Bottom View

3. Figure
The EUT-Front View

4. Figure
The EUT-Back View

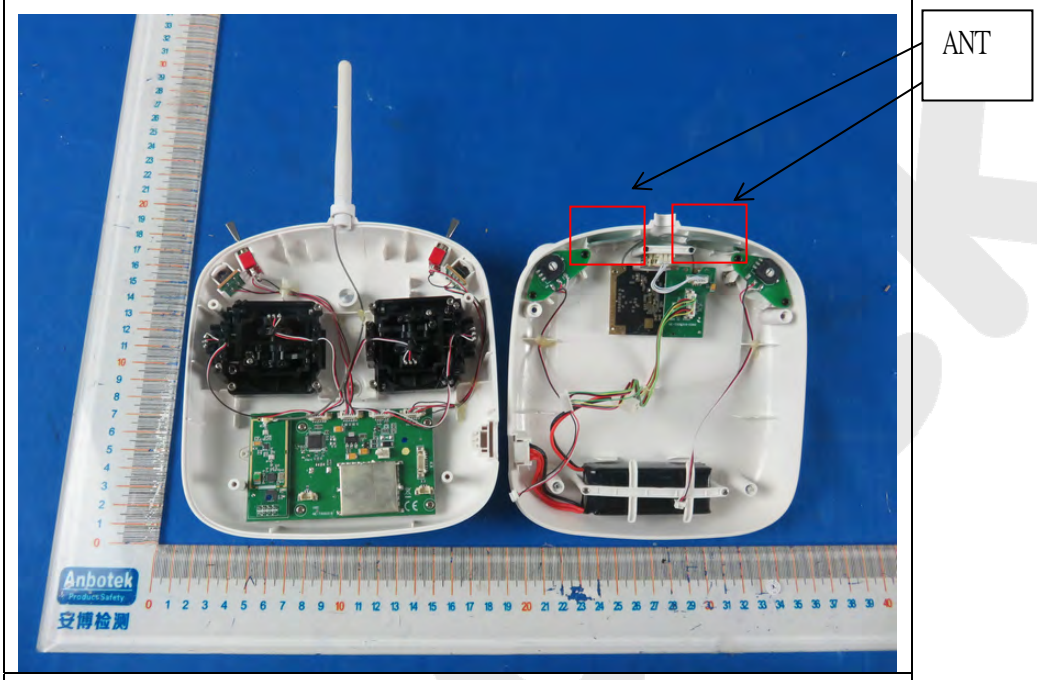


5. Figure
The EUT- Right View

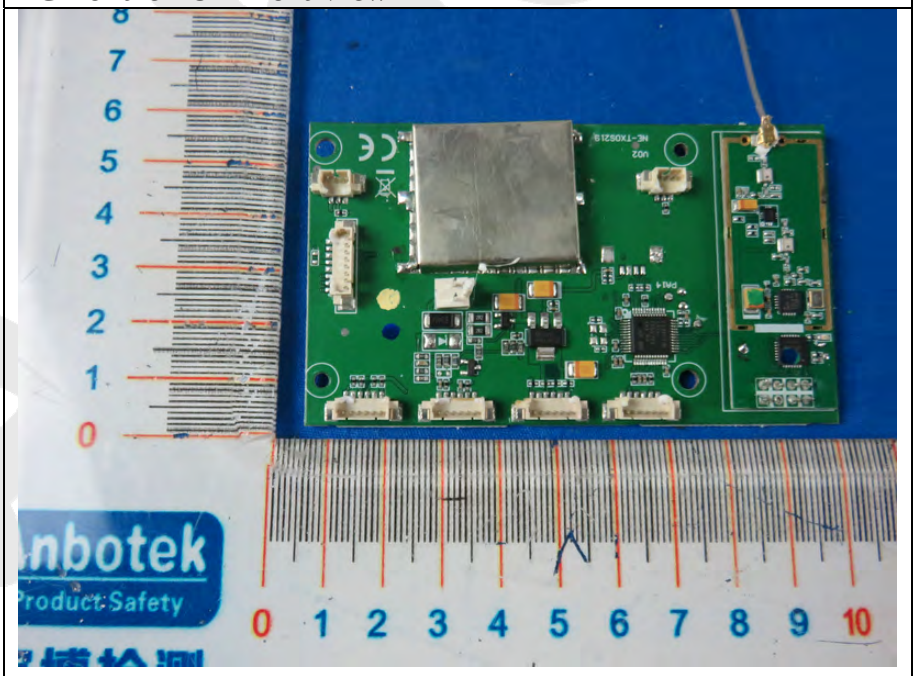
6. Figure
The EUT- Left View

APPENDIX Ⅱ(INTERNAL PHOTOS)

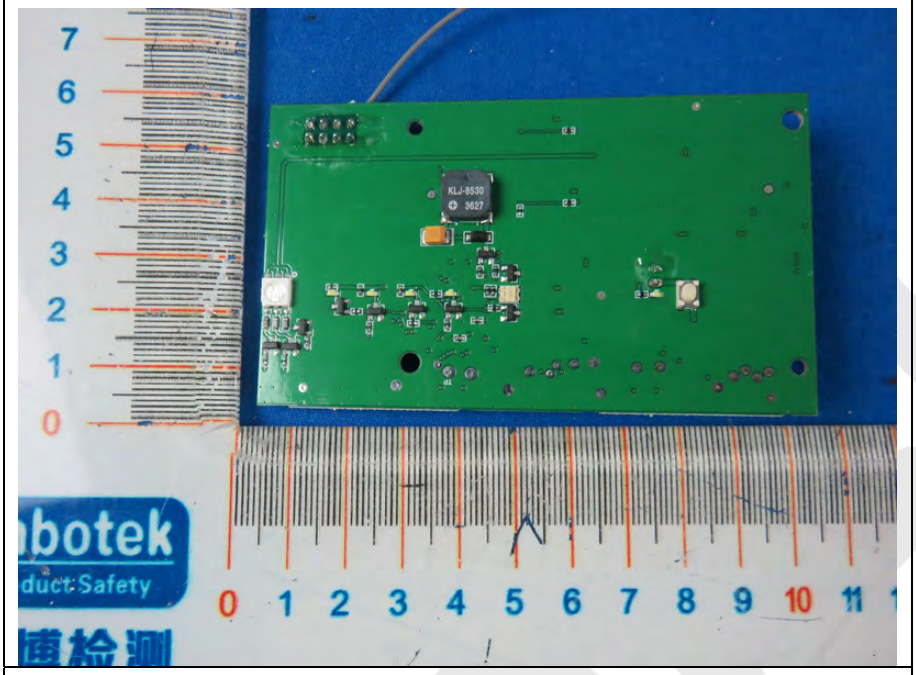
1. Figure
The EUT-Inside View



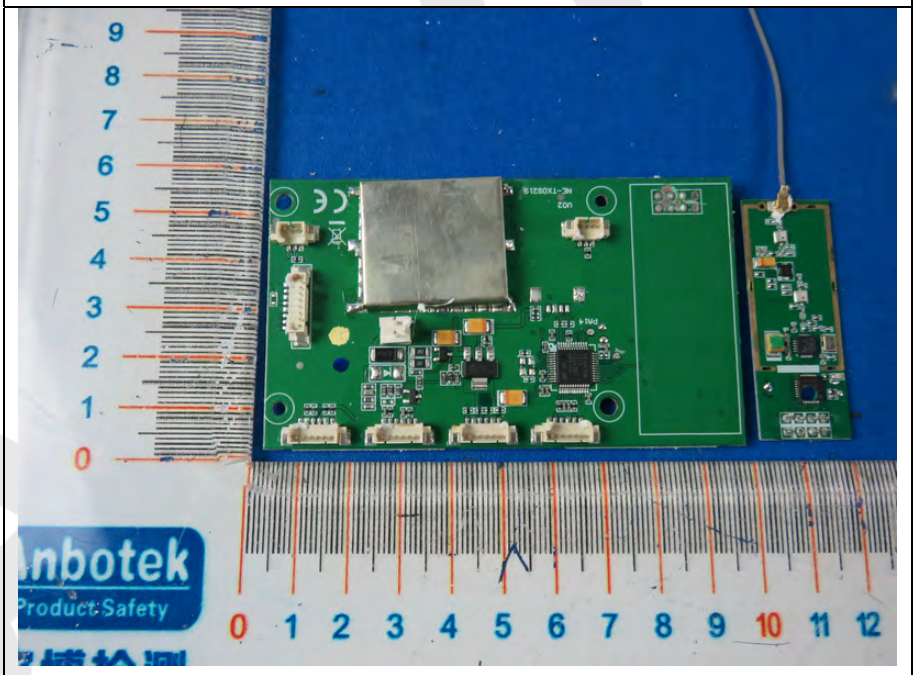
2. Figure
PCB of the EUT-Front View



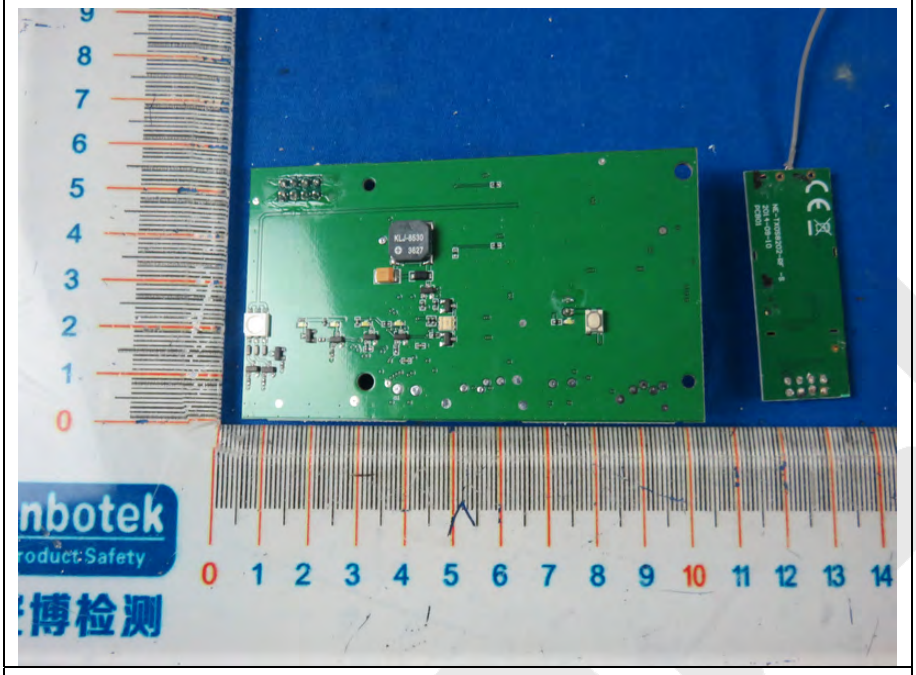
3. Figure
PCB of the EUT-Back View



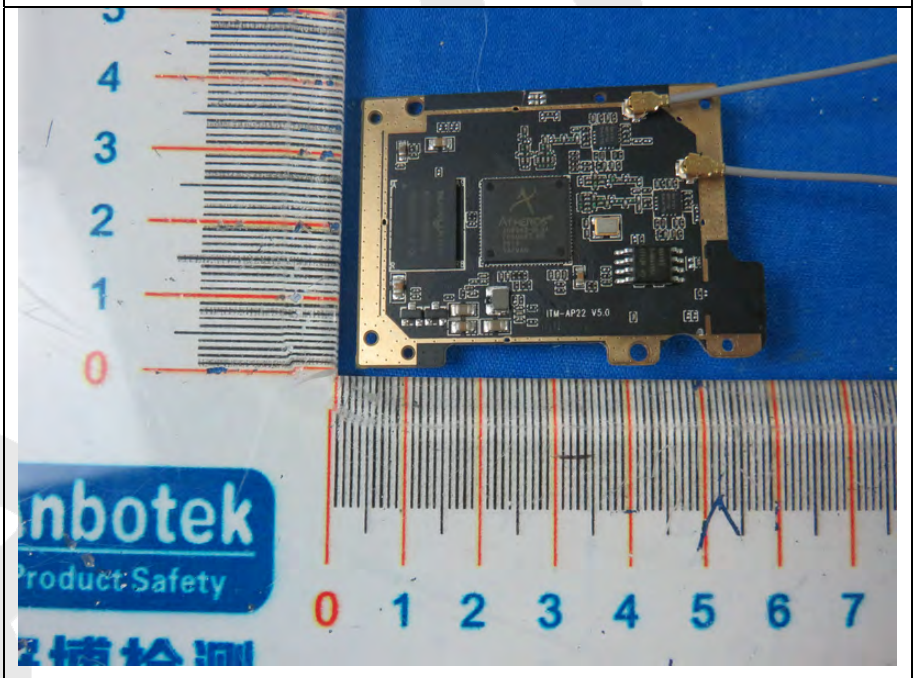
4. Figure
PCB of the EUT-Front View



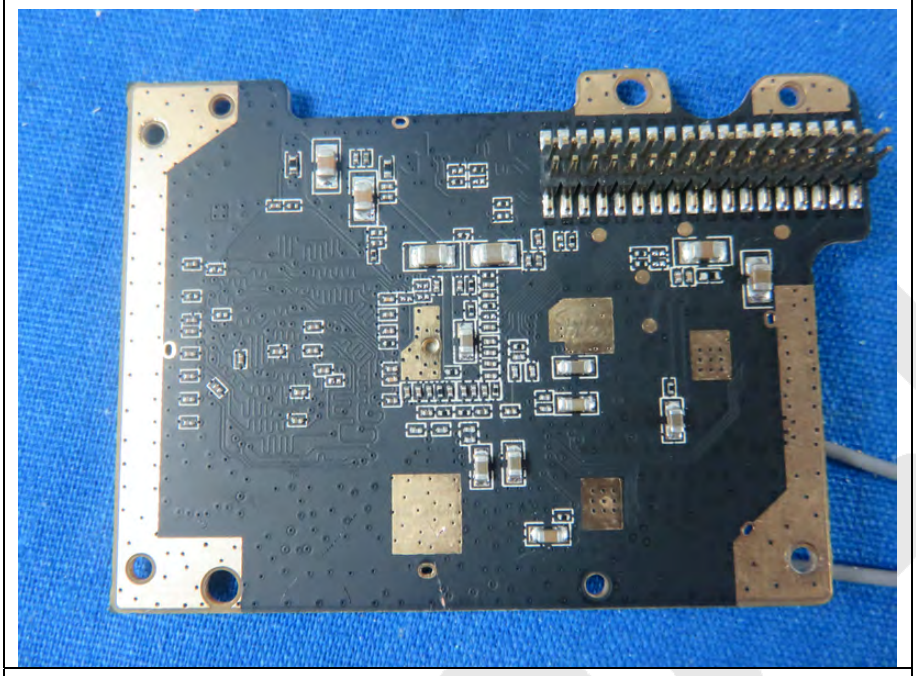
5. Figure
PCB of the EUT-Back View



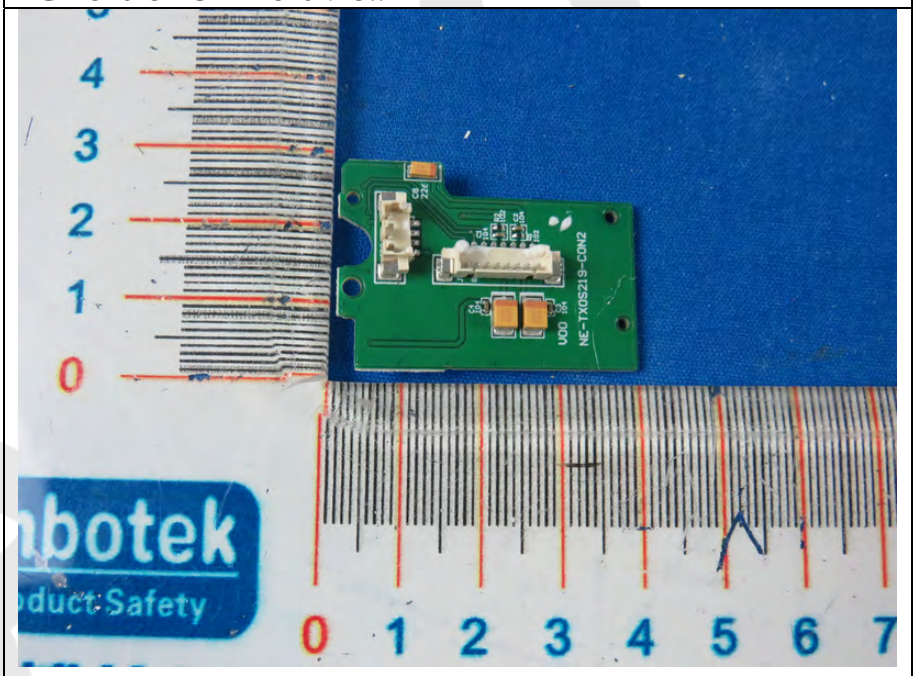
6. Figure
PCB of the EUT-Front View



7. Figure
PCB of the EUT-Back View



8. Figure
PCB of the EUT-Front View



9. Figure

PCB of the EUT-Back View